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HELMINTHIASIS.

JOYEUX (Ch.). **L'étude des Helminthiases.**—*Congrès de la Santé Publique et de la Prévoyance Sociale. Marseille. 1922. Sept. 11–17.*—1922. 20 pp.

Professor Joyeux, lamenting the paucity of French names among investigators of Helminthology of late years, has issued this paper as a guide for his confrères in the Colonies in studying and carrying out research in this subject.

The plan of study is divided into two main parts: (1) Medical, including the pathology and treatment of disease due to helminths. (2) Epidemiological, devoted particularly to the question of the evolutionary cycles.

He indicates the lines along which research should be carried out, starting with the morphology in the adult and larval stages, and proceeding to the identification of the larva by experimental infection of hosts, until we arrive again at the point of departure. As a concrete example of the method recommended, Joyeux gives the steps followed by LEIPER in discovering the mode of transmission of *S. haematobium* in Egypt. He treats in some detail of the rearing of experimental animals, pointing out a few of the difficulties met with.

The paper as a whole would constitute an excellent introductory lecture on the subject of research in helminthology, and if the advice given were conscientiously followed there would be a considerable reduction of ill-digested matter which from time to time finds its way into scientific periodicals.

H. Harold Scott.

LEGER (Marcel) & BAURY (A.). **Parasitisme intestinal au Sénégal.**—*Bull. Soc. Path. Exot.* 1922. Dec. 13. Vol. 15. No. 10. pp. 1020–1023. [4 refs.]

During October 1922 faecal examinations of 1,011 patients at the Colonial Hospital and at the Central Hospital, Dakar, were carried out. Of this number 629 were natives and 382 Europeans. The majority of the latter presented diarrhoeic or dysenteric symptoms. The former

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are divided into two categories according as they showed intestinal symptoms or not. The following table is compiled from information in the text :—

—	No. examined.	No. positive.	Percentage.	*Ent. histolytica.*	Flagellata.	Ankylostomes.	Ascaris.	Trichuris.	Taeniae.
Natives exhibiting no intestinal symptoms	444	291	65·5	—	—	50·5	20·9	10·3	4·2
Natives with dysenteric or diarrhoeic symptoms	185	120	64·8	61	13	6	1	0·5	0·5
Europeans	382	200	52·5	27·7	9	4·2	4·6	7·7	1

R. T. Leiper.

ARLO (J.). **Recherches sur le parasitisme intestinal chez les tirailleurs sénégalais.**—*Bull. Soc. Path. Exot.* 1923. Mar. 14. Vol. 16. No. 3. pp. 180–183.

The stools of 451 Senegalese soldiers were examined for evidence of intestinal parasites, and 50·1 per cent. were found to be harbouring hookworm, ancylostoma being more than three times as numerous as necator; 4·65 per cent. harboured *Taenia saginata*. Only a few showed other helminth infections. The degrees of parasitism varied widely in different colonies; thus, it was low (18 per cent.) in Senegal, but high (71 per cent.) in Dahomey, where there is more water and the "sanitary conditions are deplorable."

R. T. L.

REZENDE (Motta). **Verminoses na Policia Militar.** [Helminthiasis among the Military Police.]—*Arch. Brasileiros de Med.* 1923. Feb. Vol. 13. No. 2. pp. 171–199.

Of 745 cases in the Federal District of Rio, 580, or 77·8 per cent., were found to harbour helminths. Multiple infection was common, the most frequent being necator, ascaris, and trichuris. There was not a high degree of anaemia; more than half of the cases had over 80 per cent. haemoglobin, and a larger proportion still exceeded 4½ million red corpuscles per cmm.

[The actual percentage infected with necator is not easy to estimate, as the figures are given in different combinations in various tables, but would appear to be in the neighbourhood of 40 per cent. or a little over.]

One patient suffering from necator, trichuris, and schistosome infection showed symptoms of pernicious anaemia—Hb 22 per cent., red cells 1,280,000.

For nematode infections oil of chenopodium was used, two capsules, each containing 25 drops, being the usual dose, followed an hour later by 40 gm. of magnesium sulphate. The treatment was repeated two or three times. For taenia, the ethereal extract of Felix mas with calomel, and for schistosomes "intravenous injection of emetine hydrochloride and tartar emetic." [In neither is the dosage stated.]

H. Harold Scott.

Beach (W. H.) & O'Brien (H. R.). **A Study of Intestinal Parasites of a Small Group of Siamese Soldiers.**—*Milit. Surgeon.* 1923. May. Vol. 52. No. 5. pp. 510–513.

Of the soldiers examined 103, of ages varying between 18 and 22 years, were found to be harbouring hookworm, and were treated with thymol or oil of chenopodium. The symptoms were slight and indefinite, and the average Hb index was 76. The majority of the parasites were the necator, but in some both this and ancylostoma were passed by the same individual.

R. T. L.

Yamaguchi (Seido). [**Results of the Examination of the Students for the Eggs of the Enteric Parasites.**]—*Hokuetsu Igakkwai Zasshi* (*Jl. of Hokuetsu Med. Soc.*). 1922. Oct. Vol. 37. No. 5. [Summarized in *Japan Med. World.* Tokyo. 1923. Feb. 15. Vol. 3. No. 2. p. 34.]

Yaoita's antiformin-ether method was applied to stools from 356 students in the Niigata Medical College; 76·6 per cent. showed parasitical vermin, of which 26·6 per cent. were those of ascaris, 50 per cent. trichocephalus, 16 per cent. ancylostoma, 14 per cent. trichina [is this possibly strongyloides?], 21·3 per cent. liver distome, 4·7 per cent. *Metagonimus yokogawaii*, 0·6 per cent. *Necator americanus* and 0·3 per cent. *Bothriocephalus latus.*

R. T. L.

Kamada (Ryonosuke). [**On My New Method of collecting the Parasites' Eggs.**]—*Aichi Igakkwai Zasshi* (*Jl. Aichi Med. Soc.*). 1922. Sept. Vol. 29. No. 5. [Summarized in *Japan Med. World.* Tokyo. 1923. Jan. 15. Vol. 3. No. 1. p. 11.]

Faeces is treated with a 15 per cent. solution of antiformin in a beaker. The supernatant fluid is separated off and similarly treated again. It is then centrifuged for 2–3 minutes, the supernatant stained antiformin layer is poured off, and to the precipitate 10 cc. of saline solution of specific gravity 1050 is added. It is again centrifuged for 2–3 minutes, and the sediment is then examined microscopically.

R. T. L.

Molinari (G.). **La nosografia dell' elminthiasi come criterio presuntivo di diagnosi.** [Presumptive Diagnosis of Helminthiasis from Clinical Signs.]—*Riforma Med.* 1923. Feb. 12. Vol. 39. No. 7. pp. 158–159.

The author recounts the signs which frequently accompany the presence of worms—cough, grinding of the teeth, night-terrors, and so forth—and states that such are sufficient for diagnosis, though it is as well to confirm by faecal examination.

R. T. L.

BARLOW (C. H.). **Life Cycle of *Fasciolopsis buskii* : Discovery of Means of Infestation of Human Beings.** [Correspondence.]—*China Med. Jl.* 1922. Nov. Vol. 36. No. 6. p. 546.

In a short preliminary note it is stated that the life-cycle of *Fasciolopsis buskii* in man shows differences from that described by NAKAGAWA for the pig in Formosa. These differences occur mainly in the "parthenitae" and cercariae, and suggest that the form in the man and in the pig are of different species. Human infection takes place through eating water chestnut or water red ling on which the cercariae encyst. No cases in pigs have been discovered even in the areas of greatest infestation of man around Shaohing in China.

R. T. L.

SUZUKI (Sotowo). [**Effects of Certain Physical and Chemical Influences upon the Eggs of *Fasciolopsis buski*.**]—*Taiwan Igakkwai Zasshi* (*Jl. Med. Assoc., Formosa*). 1922. Nov. No. 225. In Japanese. pp. 1–26. [English Summary. p. 1.] [Summarized also in *Japan Med. World*. Tokyo. 1923. Feb. 15. Vol. 3. No. 2. p. 36.]

The optimum temperature for the development of the eggs of Fasciolopsis appears to be between 25° and 37° C. In Formosa immature eggs do not develop in the winter when the temperature is below 20° C., while mature ones develop and hatch even when the temperature sinks as low as 3–5° C. Immature as well as mature eggs develop and hatch at 37° C. Direct sunlight, if not exceedingly severe, or the absence of it, does not influence the development. Oxygen has also been found not to be a necessary element for the development, because in a vial nearly anaerobic in condition they develop enough to hatch.

R. T. L.

LAGRANGE (E.). **Observations sur les Trématodes d'Indochine.**—*Bull. Soc. Path. Exot.* 1923. Mar. 14. Vol. 16. No. 3. pp. 173–179. [9 refs.]

The author describes some cercariae found in molluscs of Indo-China. He was unable to identify among the various cercariae examined at Saigon the larvae of *Fasciolopsis buski*. He notes that in 2,400 examinations of human stools recorded in the registers of the Institut Pasteur no case of Fasciolopsis occurred between 1918 and 1921.

R. T. L.

MUTO (Mosatomo). [**On the Duration of Life of *Clonorchis sinensis* in the Animal Body.**]—*Tokyo Iji-Shinshi* (*Tokyo Med. News*). 1922. Aug. No. 2292. [Summarized in *Japan Med. World*. Tokyo. 1922. Dec. 15. Vol. 2. No. 12. pp. 345–346.]

In dogs experimentally infected with *Clonorchis sinensis* the author observed that in one the parasites were alive after 3 years, 6 months and 15 days, and in a second case after 4 years, 1 month and 14 days.

R. T. L.

REYNAUD (G.) & LEGER (M.). **Les Bilharzioses ou Schistosomoses dans les Colonies françaises.**—*Congrès de la Santé Publique et de la Prévoyance Sociale. Marseille, 1922. Sept. 11–17.*—1922. 24 pp.

The first part of this paper is occupied by an account of the geographical distribution of schistosomiasis in the French colonial possessions. In the second section, treating of endemiological factors, is an interesting note on aberrant localization of the ova. Among these are 11 cases of terminal-spined ova in the faeces as well as urine, an equal number of similar ova in the faeces only, five cases of lateral-spined ova in the urine—in three of them in the stools also, in the remaining two in the urine only. Ova of *S. haematobium* in the faeces, while absent from the urine, occurred in Equatorial Africa only, and the authors regard this as more than a mere coincidence, and wonder whether there may be a special variety of *S. haematobium*, or whether some special gastropod is concerned in the development.

The last part of the paper deals with treatment. The chief place is assigned to intravenous injection of tartar emetic. The initial dose was usually 0·03 gm. every two or three days, increased by a like amount for four doses. The maximum dose rarely exceeded 0·13 gm, though with caution 0·16 gm. could be given. The total varied between 0·75 and 2 gm. Other methods employed were methylene blue, 0·3 gm., in cachets daily, emetine hydrochloride intramuscularly in doses varying between $\frac{1}{8}$ and $\frac{3}{4}$ gr. For bladder symptoms thymol, salol, turpentine, or urotropine was employed.

R. T. L.

LEGER (Marcel). **Les bilharzioses urinaire et intestinale au Sénégal.**—*Bull. Soc. Path. Exot.* 1923. Feb. 14. Vol. 16. No. 2. pp. 141–144.

Of 171 cases of vesical bilharziasis in French West Africa examined with care four, *i.e.*, 2·35 per cent., showed lateral-spined eggs alone or in association with terminal-spined eggs. In 10 cases, *i.e.*, 27 per cent., out of 36 of intestinal bilharziasis reported from French West Africa the *Schistosomum haematobium* occurred, and in one only of these cases in association with lateral-spined eggs.

Bullinus contortus occurs in West Africa, but its distribution is irregular and its incidence uneven. Among the other molluscs of Senegal which can be invaded by the miracidia of *S. hematobium* are *Bullinus strigosus, Pyrgophysa dunkeri, Limnaea africana, Melania tuberculata.* The carrier of *S. mansoni* in Egypt, viz., *Planorbis boissyi*, does not occur, although more than 16 other species of Planorbis are found in French West Africa, notably *Planorbis bidouxi* and *P. salinarum.*

R. T. L.

ANDERSON (Ch. W.). **Note sur les gîtes à *Bullinus* et à *Planorbis* de la Tunisie. Leurs rapports avec les foyers de Bilharziose. Carte provisoire de leur répartition.**—*Bull. Soc. Path. Exot.* 1922. Dec. 13. Vol. 15. No. 10. pp. 954–956. With 1 fig. [1 ref.]

In Tunis the distribution of the genus *Planorbis* seems limited to the Northern Region between the latitudes 37° 21 N. and 36° 23 N. The species met with belong to *P. philippii* var. *subangulatus.* The most

important focus appears to be Oued Bezirck on Cape Bon. The author has failed to find it at Gabès where it had been noted by André, and was similarly unsuccessful in obtaining *P. marmoratus*, *P. spirorbis*, *P. agraulus*, recorded by Gadeau de Kerville, or *Planorbis corneus* var. *metidjensis*.

The genus *Bullinus* is of widespread distribution in Tunis, and the species *B. contortus*, *B. brochii*, and *B. dybowski* coincide with the distribution of *S. haematobium*. No cases of *S. mansoni* are known in these regions.

R. T. L.

Gobert (E.) & Anderson (Ch.). **Un nouveau foyer de bilharziose en Tunisie.**—*Bull. Soc. Path. Exot.* 1923. Jan. 10. Vol. 16. No. 1. pp. 18–21. [2 refs.]

Chaurand (G.) & Diacono (H.). **Contribution a l'étude de la répartition géographique de la bilharziose en Tunisie. Note sur six nouveaux cas originaires de Kairouan.**—*Arch. Insts. Pasteur de l'Afrique du Nord.* 1923. Feb. Vol. 3. No. 1. pp. 94–96. [2 refs.]

Bilharziasis is widespread in the oasis of Nefzaoua and at Gafsa, but has not been recorded hitherto from the central region of Tunis. Seven cases of vesical bilharziasis have recently been observed at Kairouan by Drs. Chaurand and Diacono. None of these cases had ever left the town. The authors have found *Bullinus contortus* in plenty in the neighbouring ponds.

R. T. L.

Archibald (R. G.). **Some Investigations connected with the Spread of Bilharziasis in the Dongola Province of the Sudan.**—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1923. Jan. 18. Vol. 16. No. 7. pp. 419–426. With 1 plate. [3 refs.]

Bilharziasis is most prevalent in the province of Dongola in the villages bordering upon the pump-irrigated areas, notably Nuri, Kareima, Goria ; cases have also occurred at Tangassi and Argo Island. Intestinal bilharziasis due to *S. mansoni* does not exist among the native population. Large numbers of *Isidora* [*Bullinus*] *innesi* were present in the irrigation canals. These were experimentally infected in the laboratory at Khartoum, and the resulting cercariae were found to have on the average slightly smaller measurements than those given by Bahr and Fairley and Faust for *S. haematobium*. Negative results followed attempts to infect experimentally *Cleopatra bulimoides*, *Corbicula consobrina*, *Lanistes carinatus* and *Melania tuberculata*. Measures for the eradication of the disease consist of (*a*) action of anthelmintic drugs administered to the infected persons, (*b*) destruction of the molluscan intermediaries. His experience in Dongola leads the author to affirm that method (*a*) can be considered only an incomplete one for eradicating the infection on account of the number of infected women and children who will not submit to treatment, the difficulty of controlling the antimony therapy, and the existence of latent cases of infection. Although at first sight difficult, the proposal first made by Leiper to eradicate the molluscs by intermitting the flow in irrigation areas during the summer months is a practical proposition in Dongola. The use of well water for ablution and drinking is also a valuable prophylactic measure.

R. T. L.

CAWSTON (F. G.). **The Experimental Infection of Some Animals with Cercariae from Fresh-Water Snails.**—*S. African Med. Rec.* 1923. Mar. 10. Vol. 21. No. 5. pp. 112–113.

Guinea-pigs fed upon lettuce on which *Cercaria pigmentosa* from *Limnaea natalensis* had been allowed to exist were found after 62 days to harbour immature flukes resembling *Fasciola gigantica* in the liver, thus confirming previous work by A. PORTER. Guinea-pigs were also infected by the mouth by feeding with lettuce containing numerous schistosome cercariae from *Physopsis africana*. *S. haematobium* and *S. bovis* were thus obtained experimentally.

R. T. L.

CAWSTON (F. G.). **The Experimental Infestation of** *Physopsis africana*. —*Ann. Trop. Med. & Parasit.* 1922. July 20. Vol. 16. No. 2. pp. 207–211. With 3 text figs. [2 refs.]

For experimental work *Physopsis africana* was readily reared in wooden tubs kept out of doors in a shady place and without change of water. Although the author has found apparently mature cercariae in Physopsis exposed to infection only a fortnight previously, cercariae are never discharged by the snail until the lapse of about 35 days.

R. T. L.

GREVAL (S. D. S.). **Schistosomiasis Bilharziasis in Arabia. A Preliminary Report.**—*Indian Jl. Med. Res.* 1923. Apr. Vol. 10. No. 4. pp. 943–947. With 1 map in text.

During a period of seven months two cases of *S. haematobium* and two of *S. mansoni* have been found in the laboratory at Aden. Two of these, one from each group, had never left the mainland of Arabia, while the other two had visited Kamran and Perim, just off the coast, which, like Aden, are supplied with condensed water. This is said to be the first record of the occurrence of *S. mansoni* in Asia.

R. T. L.

BETTENCOURT (A.) & FIGUEIRA (L.). **Un nouveau foyer de bilharziose vésicale dans l'Algarve (Alportel).**—*C.R. Soc. Biol.* 1923. Feb. 3. Vol. 88. No. 4. pp. 319–320.

Following upon the discovery by Dr. SILVA, of Olhao, of a case of vesical bilharziasis in Algarve in a patient who had not had any opportunity of contracting the infection in the known endemic centre of Atalaia at Tavira, the authors have searched for another endemic focus and have found the eggs of *S. haematobium* in the urine of 9 out of 12 suspected cases in the village of Alportel, 28 kilometres from Tavira. They suspect that these infestations were acquired from one of the small pools named " Pego do inferno," on a stream rising at Alportel. In these waters occur *Planorbis dufourii*, which has already been shown to be the carrier of *S. haematobium* at Tavira. Local opinion maintains that the appearance of bilharziasis in this region is relatively recent.

R. T. L.

FRANÇA (Carlos). **L'hôte intermédiaire du** *Schistosomum haematobium* **au Portugal.** (*Planorbis dufourii* Graells.)—*Bull. Soc. Path. Exot.* 1922. Nov. 8. Vol. 15. No. 9. pp. 805–809. [11 refs.]

Typical *Planorbis corneus* does not occur in Portugal, and the species *P. metidjensis*, implicated as a carrier of *S. haematobium* in southern

Iberia, has been held by PALLARY to be a synonym of *P. dufourii*. The author has compared these two forms in detail, and is of the opinion that they are certainly distinct, although closely allied. The number of coils of the shell differs. The aperture is oval and the shell smooth in *P. metidjensis*; the aperture is circular and the shell rough in *P. dufourii*.

R. T. L.

WILLIAMSON (George A.). **A Planorbis as the Intermediate Host of** *Schistosoma haematobium*. [Correspondence.]—*Brit. Med. Jl.* 1923. Feb. 24. pp. 351–352.

The implication of a species of Planorbis as a carrier of *S. haematobium* in Portugal greatly enlarges the possibility of the spread of vesical bilharziasis in other countries, and of the appearance of this infestation in Australia through the infection of a suitable gastropod by Australian soldiers infected in Egypt.

R. T. L.

MILTON (J.). **Schistosomiasis in Australia.** [Correspondence.]—*Med. Jl. Australia.* 1923. Feb. 10. 10th Year. Vol. 1. No. 6. pp. 166–167.

As recent work has demonstrated that the two common African schistosomes can and do under certain conditions adapt themselves each to the generic host of the other the possibility of these parasites adapting themselves to new countries is enormously increased, and Australia, with its many species of Bullinus, Isidora and Isidorella, lies open to invasion [although recent curative prophylaxis minimizes the seriousness of the outlook].

R. T. L.

DEW (Harold R.). **Observations on the Pathology of Schistosomiasis** (*S. haematobium* **and** *S. mansoni*) **in the Human Subject.**—*Jl. Path & Bact.* 1923. Jan. Vol. 26. No. 1. pp. 27–39. With 2 plates. [12 refs.]

This account of the pathology of schistosomiasis is based on material obtained from the Kasr-el-Ainy Hospital at Cairo and from autopsies at No. 3 Egyptian Stationary Hospital, Kantara. As all of the 47 cases studied died of some other disease—pneumonia, relapsing fever, dysentery, etc.—there is naturally a difficulty in separating entirely the conditions due to schistosomiasis and those caused by the other diseases. The paper is divided into three sections, the first dealing with the general pathology of schistosomiasis, the second and third with the detailed findings in *S. mansoni* and *S. haematobium* infections. The second is the most interesting section. The ova of *S. mansoni* are more widely distributed than is generally believed; they were found in the liver, pancreas, small intestine, vermiform appendix, retro-peritoneal tissues, lung, lymph-glands, brain, spinal cord, heart, and ovary, as well as in the rectum and bladder. Apart from the irritative reaction set up by the ova a toxin produced locally by the worm probably accounts to a considerable extent for the tissue changes present, especially in the liver.

R. T. L.

CAWSTON (F. G.). **Personal Experiences of Bilharzia Disease.**—*Jl. Trop. Med. & Hyg.* 1923. Apr. 2. Vol. 26. No. 7. pp. 111–112.

Dr. Cawston accidentally infected himself with *S. haematobium* in April [1922 ?] when collecting or dissecting specimens of Physopsis. Early in May his blood showed an eosinophilia of 39·5 per cent., but not till December 27th did the ova appear in the urine. On January 8th he injected himself with ½ gr. tartar emetic in 1 cc. of tap-water, the following day ¾ gr. in 1½ cc., and on the third day 1 gr. in 2 cc., on the 12th 1¼ gr. Thereafter for ten days dead ova appeared in the urine. About a year later, as he had lost weight and the eosinophilia was still 15 per cent., the injections were renewed. Beyond "catarrhal" symptoms after the first series there were no untoward effects from the drug. This may account for the many instances in which the injections are discontinued on account of "influenza" supervening.

R. T. L.

MENDOZA-GUAZON (Maria Paz). **Schistosomiasis in the Philippine Islands.**—*Philippine Jl. Sci.* 1922. Dec. Vol. 21. No. 6. pp. 535–567. With 5 plates. [35 refs.].

The statement is controverted that *Schistosoma japonicum* does not occur in Manila, unless imported from the southern islands—Leyte, Samar, Mindanao—and even there it is uncommon. Ten fresh cases are recorded in detail, and seven of these patients were residents of Manila. *Blanfordia nosophora* has not been recorded in the Philippines, though, if it did exist, all the conditions favourable for endemicity and spread of the disease are present—warm climate, continuous rain, vegetation, bad conservancy methods, and the habit of the labourers of wading the rice fields barefooted and of eating partially cooked snails. Whether, therefore, some other host serves as intermediary or whether the snail is introduced in small numbers, being able to survive the short journey from Japan to the Philippines, is undecided.

R. T. L.

MELENEY (Henry Edmund) & FAUST (Ernest Carroll). **The Intermediate Host of** *Schistosoma japonicum* **in China.**—*Proc. Soc. Experim. Biol. & Med.* 1923. Vol. 20. No. 4. pp. 216–218.

The authors report the discovery of the intermediate host of *S. japonicum* in small canals, particularly terminal ones, in the Soochow district of the Kiangsu Province of China. Five per cent. of the snails collected from a canal near which many cases of schistosomiasis resided were infected ; 31 days after immersion in water containing cercariae from these snails a mouse showed infection, and snails were infected after exposure to miracidia of *S. japonicum*. The shell is 6·4 mm. in length, acuminate, dextrally coiled with seven spirals, and of greater density than that of *Blanfordia nosophora*. This snail was not found in the rice fields, owing probably to the height of these fields above the level of the canals. Experiments showed that the Japanese and Chinese forms of *S. japonicum* are identical.

R. T. L.

LIBBY (W. E.). **Tartar Emetic in Schistosomiasis Japonica. A Preliminary Report.**—*China Med. Jl.* 1923. Feb. Vol. 37. No. 2. pp. 158–166. [9 refs.].

This is a record of eight cases of infection with *S. japonicum*. One refused to stay in hospital and had no treatment ; the other seven were

given tartar emetic. Of these the first received only one injection ($\frac{1}{2}$ gr.); the second died four days after his first injection ($\frac{1}{2}$ gr.); the third was sent home as a hopeless case after he had received a total of $6\frac{1}{12}$ gr.; the fourth received altogether 12 gr. in 50 days and was discharged "very little improved"; the fifth was still in hospital and had had $5\frac{11}{12}$ gr. during the month without amelioration; the sixth improved as regards his general condition after ten injections in seven weeks; the seventh died about 40 hours after his seventh injection in 14 days, the size of the last dose being 3 gr. and the total $12\frac{5}{6}$ gr. The author ascribes the death to the drug. Judging from this series, though small, the results of intravenous tartar emetic appear to be less successful in infections with *S. japonicum* than with other species.

R. T. L.

TROLLI. **Trois cas de Bilharziose traités par l'émétique.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 175–177.

Though cases of "bilharzial dysentery" with terminal-spined ova have been reported at the native hospital at Kigoma, the author had never seen one of urinary schistosomiasis among the inhabitants of Kigoma and Ujiji. He gives an account of three cases, an Arab, a Hindu, and a native nurse at the European hospital. Treatment by injection of tartar emetic was given. The initial dose was 6 cgm. (in one case 12 cgm. was given by mistake), then 9 cgm. for two doses, and finally 12 cgm., the injections being administered every other day. The first proved resistant, and a total of 2·2 gm. was injected before the ova disappeared; the second received 1·55 gm., the third 0·88 gm. The first patient returned to Zanzibar and his subsequent history is not known; the other two have passed no ova for the 20 months during which they have remained under observation.

R. T. L.

MCDONAGH (J. E. R.). **The Treatment of Bilharziasis with Antimony** —*Jl. Trop. Med. & Hyg.* 1923. Apr. 16. Vol. 26. No. 8. p. 119.

The author employs ampoules of 1 cc. containing $1\frac{1}{2}$ gr. of tartar emetic, diluting to 30 cc. for intravenous injection, since concentrated solutions are apt to set up venous thrombosis. The usual number of injections needed is ten, given at five-day intervals. He claims priority for the introduction of antimony in the treatment of bilharziasis.

R. T. L.

DIAMANTIS. **La théorie périnéale de l'infection de l'homme par le "*Schistosomum haematobium*" et ses conséquences pratiques.**—*Presse Méd. d'Egypte.* 1922. Dec. 1. 12th Year. 2nd Ser. No. 78. pp. 1082–1085.

A paper of special pleading for a perineal route of infection by cercariae of *S. haematobium*, repeating more fully what the author wrote seven years ago, but unsupported by any experimental evidence.

R. T. L.

Watkins-Pitchford (W.). **The Suppression of Bladderworm and Tapeworm Disease. (Blaaswoorm en Lintwoorm Ziekte.)**—*Med. Jl. S. Africa.* 1923. Mar. Vol. 18. No. 8. pp. 207–212.

The tapeworms from human subjects identified at the Institute in Johannesburg bear the following numerical relationship: *T. saginata*, 69; *T. solium*, 29; Hymenolepis, 2. No systematic effort has been made in the Union of South Africa to eradicate these infections. Hitherto the only public health measures adopted have been directed against the sale of meat containing bladderworms. The author holds that the disease in man and in animals should be regarded as one, and calls for the compulsory notification by doctors of cases of tapeworm infection to the local authority, and by veterinary, meat and sanitary inspectors and butchers of the discovery of measles, giving also the name of the breeder.

Of 139,899 cattle slaughtered in the Pretoria abattoir from 1914 to 1922, 1,134, *i.e.*, 0·81 per cent., were found with cysticerci. At Johannesburg the abattoir figures were 7,521 cattle infested, *i.e.*, 0·72 per cent. out of 1,030,795 cattle slaughtered in 11 years. Of 38,510 pigs slaughtered at the Pretoria abattoir, 3,490, *i.e.*, 9·06 per cent., were infested with cysticerci. Of 343,177 pigs slaughtered at the Johannesburg abattoir, 32,359, *i.e.*, 9·42 per cent., were infested. These figures do not include cases in which cysticerci were recognized in the living animal, which was thereupon returned to the owner as "fit for breeding purposes." There is an erroneous assumption that freezing or chilling for a few days destroys the cysticerci. Experiments made in the Johannesburg Institute indicate that hard freezing from 12 to 15 weeks is required to achieve this result. Since 1919, 13 cases of human infestation with cysticerci have been investigated at the Institute. In two the cysts were those of *T. saginata*, in the remaining 11 the cysts were of *T. solium*. Six of the cases terminated fatally from the presence of the cysts in the brain, and death had been certified as due to "epilepsy" or "cerebral haemorrhage."

Recently published statistics show that from 10–19 per cent. of all individuals in the Transvaal are the subject of tapeworm infestation. Precautions against the spread of the disease through the penalizing of uncleanly habits and the restriction of pigs to sties would remove an obstacle to the development of a staple industry of South Africa.

R. T. L.

i. Joyeux (Ch.). *Hymenolepis nana*, **v. Sieb. and** *Hymenolepis fraterna*, **Stiles.**—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1923. Feb. 15. Vol. 16. No. 8. pp. 502–504. [4 refs.]

ii. Lane (Clayton) & Low (George C.). *Hymenolepis nana* **and** *Hymenolepis fraterna.* **(A Reply to M. Joyeux.)**—*Ibid.* pp. 504–508. [2 refs.]

iii. Nicoll (Wm.). iv. Leiper (R. T.). **The Life-history of the Tapeworm** *Hymenolepis nana.* [Correspondence.]—*Lancet.* 1923. Apr. 21. p. 821; Apr. 28. p. 872.

i and ii. Joyeux maintains his view that *Hymenolepis nana* of man and *H. fraterna* of the rat are distinct forms, and replies to criticisms of Lane and Low in a recent article in a textbook on the Practice of Medicine in the Tropics, edited by Byam and Archibald. He points out that some other tapeworms develop to the cysticercoid stage in the

definitive host, *e.g.*, *Hymenolepis erinacei* and *Anomotaenia zederi*, and that he failed to infect adult fleas and flea larvae of different species with the eggs of *H. nana* of man. In reply, Lane and Low state that they had overlooked the detailed description of Joyeux's work, and had relied on an earlier summary. Criticizing this definitive paper, they state that there is no evidence that the experimental animals were freed from possible intermediate hosts, that his parasite-free strains of rats became contaminated in spite of the precautions taken, and that Joyeux's experiments may be used to uphold the theory that indirect infection can occur. In the cases quoted by Joyeux of the occurrence of a cysticercus in the same host as the adult, there is no evidence that the cysticercus will develop a strobilus direct without first leaving the host and being afterwards eaten.

iii and iv. In a letter to the *Lancet* Nicoll states that the Review on "Medical Helminthology" in this *Bulletin*, Vol. 20, No. 2, pp. 85–91, gives a misleading account of his work on Hymenolepis in rat fleas. He does *not* claim that the forms described by Minchin and himself in 1911 from fleas belong to the species of Hymenolepis known as *H. nana*.

R. T. L.

Uchimura (Ryoji). [**On the Development of** *Hymenolepis nana* **and** *Hymenolepis murina*.]—*Jikwa Zasshi* (*Jl. of Pediatrics*). 1922. Sept. No. 268. [Summarized in *Japan Med. World*. Tokyo. 1923. Mar. 15. Vol. 3. No. 3. p. 53.]

The eggs of *Hymenolepis nana* and *H. murina* develop into cysticercoids in the mucosa of the intestine of the white rat. Morphologically also these two species cannot be distinguished in the adult form, as larvae or eggs. They do not differ in the route of infestation, and the author concludes that these species must be considered to be identical.

R. T. L.

Katsunuma (S.). *Hymenolepis diminuta* **in Japan.**—*Trans. 4th Congress Far Eastern Association Trop. Med.* 1921. Vol. 1. pp. 482–484.

The author reports on a specimen of *H. diminuta* from a child, four years of age, believed to be the first recorded in Japan, although the ova have been noted on several occasions. Subsequently two other instances of the passage of the worm in the faeces were brought to his notice.

R. T. L.

Gautier (P.). **Un cas de méningite vermineuse.**—*Bull. et Mém. Soc. Méd. des Hôpit. de Paris.* 1923. Mar. 22. 3rd Ser. 39th Year. No. 10. pp. 429–432. [4 refs.]

A boy, five years of age, was sent to hospital with very definite symptoms of meningitis (as opposed to meningism)—headache, vomiting, rigidity of neck, positive Kernig's sign, albumen in the cerebro-spinal fluid, and increase of cells up to 400 per cmm. The symptoms rapidly improved in 48 hours after expulsion of *Taenia solium* by Filix mas, and the child was discharged cured on the fifth day.

R. T. L.

Carbonell (Manuel V.) & Zwanck (Alberto). **Profilaxis de la hidatidosis.** [Prevention of Echinococcus Infection.]—*An. del Depart. Nac. Hig.* Buenos Aires. 1922. Sept.–Oct.–Nov. & Dec. Vol. 28. No. 5 & 6. pp. 303–313. With 1 chart.

In 1901 Vegas and Cranwell reported that 40 per cent. of the pigs killed in the slaughter-houses of Buenos Aires were infested with echinococcus. Though less now in these animals, there has been an increase in the numbers of cattle and sheep infected, and the mortality curve of hydatid disease in man has followed closely the incidence curve in sheep. In 1906 more than 5 per cent. of the dogs were found to be harbouring the cestode, and cattle become infected from contamination of the pastures, water, etc., by their faeces. To treat all the dogs is impossible, and the only solution of the problem is to prevent them eating the flesh of animals containing fertile cysts. With this aim in view a resolution was passed at the Second National Medical Congress in 1922 suggesting legislation to prevent dogs frequenting slaughter-houses, and to compel the destruction of all infected meat.

H. Harold Scott.

Ando (Akira). [**A Contribution to the Study of** *Sparganum mansoni*. **II. Communication. On** *Sparganum mansoni* **found Infesting the Domestic Fowls.**]—*Iji-Shimbun* (*Med. News*). 1922. Oct. No. 1104. [Summarized in *Japan Med. World*. Tokyo. 1923. Feb. 15. Vol. 3. No. 2. p. 31.]

In 11 domestic fowls from villages near Kyoto specimens of *Sparganum mansoni* were found. These had the same morphology as those described from man and frogs. Five dogs were fed, each with two of these parasites from the fowls, and in two of the dogs fully grown adult forms were afterwards found. The English abstract does not say anything regarding the specific characters of these adults.

R. T. L.

Ando (Akira). [**On** *Sparganum mansoni* **found in the Testicle.**]—*Nihon Hitsunyokibyo Gakkwai Zasshi.* (*Jl. Japan Urol. Soc.*) 1922. Sept. Vol. 11. No. 3. [Summarized in *Japan Med. World*. Tokyo. 1923. Mar. 15. Vol. 3. No. 3. pp. 56–57.]

The author reports a rare case of *Sparganum mansoni* infesting the testicle. After removal he fed the worm to an experimental animal, in which it grew to an adult form, agreeing completely with the adult described by Yamada.

R. T. L.

Hutchison (Robert). **The Treatment of Intestinal Worms.**—*Lancet.* 1923. Apr. 14. pp. 762–763.

As a purgative after Filix mas for eradication of tapeworms castor oil is better avoided, as some poisonous constituents of the drug are soluble in it. The author, however, found a German preparation (not obtainable since the war), Filmaron, very successful. This consists of the active principle of male fern dissolved in castor oil, the dose for an adult being ½ oz.

R. T. L.

Lundsgaard (K. K. K.). **Er Neosalvarsan et Baendelormemiddel ?** [Is Neosalvarsan a Remedy for Tapeworm ?]—*Hospitalstidende.* 1923. Vol. 66. No. 10. p. 190.

A man of 67, originally admitted to hospital for a cataract operation, developed abdominal pain. Appendicitis was excluded, but no definite diagnosis was made. He had some ophthalmic complications—glaucoma and irido-cyclitis. Eventually, when signs of sympathetic ophthalmia appeared, treatment with neosalvarsan was begun. Intravenous injections of 0·3, 0·3, 0·45, 0·6, and 0·9 gm. were given on successive days. Twelve days after the last dose a much decomposed strobila of *Taenia saginata* was passed. Further pieces of the tapeworm were evacuated during the next few days.

The interesting question is whether the neosalvarsan killed the parasite, which seems probable in view of the toxicity of the drug and of the fact that it is excreted partly by the intestine (diarrhoea is occasionally caused by the injections).

E. E. Atkin.

Hetherington (D. C.). **Some New Methods in Nematode Technique.** —*Jl. Parasit.* 1922. Dec. Vol. 9. No. 2. pp. 102–104. [3 refs.]

As a rapid and reliable fluid for killing, clearing and dehydrating nematodes the following, designated "Carnoy-phenol," is recommended :—

Absolute alcohol	20 cc.
Chloroform	15 cc.
Glacial acetic acid	5 cc.
Phenol crystals to raise the volume by ..	10 cc.
Total	50 cc.

The mixture is very corrosive, and must be kept in glass-stoppered bottles, but not stored for longer than two weeks. Nematodes may be taken from 70–80 per cent. alcohol, glycerine, lacto-phenol or formol and placed in the fluid, from which the specimens may be prepared either for sectioning or for mounting in balsam. Oil of wintergreen is slowly and thoroughly mixed with the specimens. After 10–15 minutes they may be infiltrated by paraffin. The wax is shaved into the dish containing the specimens in the clearing fluid and set aside in a warm place for two hours, after which the worms should be transferred to pure paraffin for melting at 58° C. for embedding. For mounting in balsam a technique is given by which a specimen is transferred slowly to balsam after clearing in oil of wintergreen. Diaphane "is said to be an excellent resinous medium for very transparent work." Specimens which have become dry through breakage of the glass container or imperfect sealing should be soaked in 35–50 per cent. alcohol, to which an equal volume of lactic acid has been added. The acid should be removed afterwards by thorough rinsing in 70 per cent. alcohol.

R. T. L.

Hall (Maurice C.) & Shillinger (Jacob E.). **Miscellaneous Tests of Carbon Tetrachlorid as an Anthelmintic.**—*Jl. Agric. Res.* Washington. 1923. Jan. 20. Vol. 23. No. 3. pp. 163–192.

A valuable record of a large number of tests as to the anthelmintic properties of carbon tetrachloride. Tests of the effective, the optimum,

the tolerated and the toxic doses were carried out on chickens, rabbits, dogs, cats, foxes, swine, sheep, cattle, monkeys, and the results of administration to horses and man noted. The paper is too full of detail to permit of an adequate summary; suffice it to say that the drug is very effective in removing blood-sucking strongyles; on Ascarids the effects vary with different species. In man it is *less* efficacious than oil of chenopodium. It will expel Trichuris if this can be exposed to the action of the drug. Finally, it is cheap, is a simple compound, and can be easily tested as to its chemical purity. Untoward symptoms rarely arise if it is given in hard capsules, whereby too early solution and consequent inhalation are avoided.

R. T. L.

Roy (S. K.). **Strongyloidosis.**—*Indian Med. Gaz.* 1923. Apr. Vol. 58. No. 4. pp. 155–158. With 13 figs.

Strongyloides stercoralis occurred in 49 cases out of 300 (16·3 per cent.) examined at the Puri Jail and Sadar Hospital in Orissa. The author describes newly hatched strongyloides larvae and later stages. He states that when present in small numbers these parasites may give rise to no symptom other than intestinal catarrh and a slight tendency to diarrhoea. Although the patient may be healthy-looking and even fat, there is a loss in average weight and the haemoglobin varies from 40 to 60 per cent. Carbon tetrachloride is of little value, and as yet no suitable remedy has been found.

R. T. L.

Hemsen. *Anguillula intestinalis* **als Ursache einer schweren sekundären bezw. perniziösen Anämie.** [*Strongyloides stercoralis* as a Cause of Severe Secondary Anaemia.]—*Deut. Med. Woch.* 1923. Jan. 19. Vol. 49. No. 3. pp. 83–85. [9 refs.]

Two subjects, aged 40 and 21 years respectively, passed blood in their stools, and no cause, other than the presence of this parasite, could be found for their condition. In the first the anaemia was of the pernicious type: red cells 960,000, haemoglobin 20 per cent., leucocytes 5,000, eosinophiles 0·6 per cent. Blood transfusion was performed on two occasions, but the patient succumbed. In the second there was a different type. On admission there were 4,300,000 red cells, Hb 72 per cent., leucocytes 11,000, eosinophiles 1·3 per cent. Six weeks later, though blood had been passed daily, the count was 3,300,000, Hb 52 per cent, leucocytes 35,000, eosinophiles 82·6 per cent. The patient on leaving hospital was still harbouring the worm, in spite of varied treatment, and the blood examination gave red cells 3,100,000, Hb 41 per cent., leucocytes 6,300, with 37·6 per cent. eosinophiles.

R. T. L.

Robert (Léopold). **La Gnathostomose humaine, Oedème ambulant siamois dû à** *Gnathostomum spinigerum* **(R. Owen, 1836.)**—*Bull. Soc. Path. Exot.* 1922. Nov. 8. Vol. 15. No. 9. pp. 854–860. With 5 text figs.

Gnathostomum spinigerum, a common intestinal parasite of dogs and cats, has been found twice as an aberrant form in the connective

tissue in man in Siam. The author in this paper contributes clinical notes on three additional cases. The parasite, when present in the subcutaneous or deeper tissues, gives rise to a migratory elastic oedema with painful irradiations, which is highly characteristic and is well known to all Siamese, although not hitherto described in medical literature. The parasite tends to extrude itself, but the skin is not the only point at which this may take place. It is noted that in one case the parasite was discharged from the tongue, in another it escaped in the neighbourhood of the pharynx. The diverse symptoms, such as haemoptysis, haematemesis, haematuria, which can undoubtedly be attributed to the migrations of this parasite render it one of great practical interest in tropical countries.

R. T. L.

Blacklock (B.). **The Signs of Filarial Disease.**— *Ann. Trop. Med. & Parasit.* 1922. July 20. Vol. 16. No. 2. pp. 107–117. With 1 text fig.

So varied in character and so diverse in their relationship to the presence of microfilaria are the signs of filarial disease that some definite mode of tabulation is desirable for purposes of comparison. The author examined 240 cases at Mabaya, Sierra Leone, and has analysed the filarial signs in these in accordance with the standard previously established by Stephens. The results show that "in this series many of the 'signs of filarial disease' have no more correlation with the presence of microfilaria in the blood than has hernia; some have less."

R. T. L.

Roy (S. K.). **Further Notes on Filariasis.**— *Indian Med. Gaz.* 1923. Feb. Vol. 58. No. 2. pp. 56–58. With 13 text figs.

An account of two cases of filarial affection of the scrotum, in one of which ova in various stages of development were seen in the lymph. From this fact the writer infers that filariae are oviparous. During two years when lymph oozing was fairly free there was no fever, but when the flow was stopped by operative measures the fever returned.

R. T. L.

Courtney (B. J.). **The Association of Certain Common Complaints as seen in Native Hospital Patients with the Presence of Microfilariae in the Blood.**— *Jl. Trop. Med. & Hyg.* 1923. Mar. 15. Vol. 26. No. 6. pp. 87–89.

Though many natives in Northern Nigeria have microfilariae in their blood, the Annual Returns show only a few cases of filariasis. Examination of patients reporting sick with muscle pains and swelling, deep-seated abscesses, and, in one case, with rigor, vomiting, abdominal pain and localized swelling (at first thought to be an appendix abscess) proved the presence of filariasis. The author thinks that these conditions are not merely associated with, but caused by, the filaria.

R. T. L.

Geneeskundig Tijdschrift voor Nederlandsch-Indië. 1923. Vol. 63. No. 1. pp. 31–47. With 1 map in text.

i. **Beknopt overzicht betreffende de filariaverspreiding in Nederlandsch-Indië.** [Concise Review of Filaria Distribution in the Dutch East Indies.]

Ibid. pp. 164–167. ii. **Aanvullingen van het overzicht van het filariaonderzoek onder de Atjehsche bevolking in het Gouvernement Atjeh en Onderhoorigheden gedurende 1922.** [Oostingh (R.).] [Additional Report.]

Both reports confirm the prevalence of infection with *Filaria bancrofti* in Atchin and Djambi in comparison with other parts of the archipelago. Of the people found infected only few showed symptoms of filariasis, *e.g.*, in Djambi 8 out of 67. Judging from the low incidence in soldiers in the endemic regions, there seems to be no great danger of infection.

Treatment with tartar emetic did not cause any improvement (two cases). For the purpose of diagnosis concentration after haemolysis was found not to give better results than the ordinary thick drop examination.

W. J. Bais.

Banerji (R. N.). **Filariasis and Haemoptysis.**—*Indian Med. Gaz.* 1923. Apr. Vol. 58. No. 4. pp. 165–166.

In a case of a Mohammedan lady, aged 52, suffering from haemoptysis at irregular periods, microfilariae were occasionally found in the sputum. Large numbers were present in the blood at night. The haemoptysis occurred suddenly and disappeared within 24 hours. No tubercle bacilli were ever found in the sputum or blood. There has been no rise of temperature, nor loss of weight or appetite, and no signs of chest lesions. The author enquires if the presence of embryos in the sputum is accidental or associated with the condition.

R. T. L.

Nattan-Larrier (L.). **La thrombo-lymphite filarienne du canal thoracique.**—*Bull. Soc. Path. Exot.* 1922. June 14. Vol. 15. No. 6. pp. 412–416. [1 ref.]

An account is given of the histological changes found in tissues sent from Hayti of a case of filariasis. The thoracic duct contained an adult filaria which apparently was still alive when the autopsy was performed. There were signs of an extensive endolymphangitis in the duct and the collateral branches, and thrombosis arose from the toxin of a supervening septicaemia, which itself was the immediate cause of the patient's death, though its origin was not discovered.

R. T. L.

Biglieri (R.). **Nouvelles observations sur la Microfilaire de Tucuman.**—*C.R. Soc. Biol.* 1923. Feb. 10. Vol. 88. No. 5. pp. 362–363. [3 refs.]

Microfilaria tucumani, found in 1914 in the province of Tucuman (Argentine), has been found again by the author in 43 out of 200 people

examined. It possesses a striated sheath like the Microfilaria bancrofti, but it was without periodicity. It is very narrow, usually 3 μ and not exceeding 3·30 μ. The author gives a somewhat vague account of the various coloured spots in these embryos. Treatment with tartar emetic reduced somewhat the number of embryos after several intravenous injections.

R. T. L.

Connal (A.) & Connal (S. L. M.). [**The Development of** *Loa loa* **(Guyot) in** *Chrysops silacea* **(Austen) and in** *Chrysops dimidiata* **(Van der Wulp).**] [Correspondence.]—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1923. Jan. 18. Vol. 16. No. 7. p. 437.

The authors' previous statement [see this *Bulletin*, Vol. 19. p. 654] that the larvae of *Loa loa* develop in the muscular and connective tissues of the flies *Chrysops silacea* and *C. dimidiata* has to be modified somewhat. Beautiful sections, prepared by Dr. A. C. Stevenson from flies supplied to him, make it perfectly clear that most of the larvae are in the fatty tissue, the so-called "fat body." It appears highly probable that Kleine's developmental forms found "in the fatty connective tissue surrounding the abdominal cavity" were, as he presumed, stages in the development of *Loa loa*.

R. T. L.

Stones (R. Y.). **The Development of** *Loa loa* **in Chrysops.** [Correspondence.]—*Brit. Med. Jl.* 1923. Jan. 13. p. 82.

At Yambio, in the Bahr el Ghazal province of the Southern Sudan, the author found Chrysops in fair number, but did not find any case of Calabar swellings among the natives. Two years later, however, one of the men with whom he had lived in Yambio reported that he had suffered since from peculiar swellings and irritations in his hands and arms, which had been diagnosed as Calabar swellings. The patient had never been in West Africa, and after leaving Yambio went to Australia via Egypt.

R. T. L.

Ouzilleau. **L'éléphantiasis au Congo et l'***Onchocerca volvulus*.—*Presse Méd.* 1923. Apr. 14. Vol. 31. No. 30. pp. 617–622. With 13 text figs. [6 refs.]

Examination of a large number of natives in the Congo revealed the fact that some 40 per cent. were harbouring *Onchocerca volvulus*. In Upper Oubangui all the cases of elephantiasis observed (79 in number, 3 per cent. of the whole) were similarly parasitized.

One hundred and eighty-two patients with elephantiasis of genitals were operated upon with excellent results, both aesthetically and functionally, and there were only four fatalities. The operation is described in detail with illustrative photographs and diagrams. No anaesthetic is used; "general anaesthesia is not necessary and injections of cocaine are dangerous, as liable to cause syncope."

Microphotographs of sections of the elephantoid skin are reproduced, and show the microfilaria of *O. volvulus* in the papillary and subpapillary layers.

Other conditions ascribed to onchocerciasis are a cutaneous pseudo-ichthyosis and lichenization, possibly craw-craw, some forms of keratitis, and various arthropathies and nutritional disturbances.

R. T. L.

LAIGRET. **Un cas d'Onchocercose observé à l'hôpital de Brazzaville.**—*Bull. Soc. Path. Exot.* 1922. May 10. Vol. 15. No. 5. pp. 303–305. With 1 text fig.

By puncture of a cystic swelling, situated over the eighth rib in the left mid-axillary line in a native, aged 35 years, numerous embryos of *Onchocerca volvulus* were obtained. There were no other cysts discovered, but an elephantoid condition of the legs and two venous varices of the abdominal wall were present. The cause of the latter could not be determined.

Examination of the blood revealed a few embryos of *Filaria perstans*. There was no evidence to support the hypothesis that the varices were associated with deep-seated onchocerca cysts.

R. T. L.

MONTPELLIER (J.) & LACROIX (A.). **Nouvelle note au sujet de la "Gale filarienne."**—*Bull. Soc. Path. Exot.* 1922. Nov. 8. Vol. 15. No. 9. pp. 815–818. [1 ref.]

A reply, partly in the nature of criticism and rejoinder, to a paper on the subject of dermal onchocerciasis by OUZILLEAU, LAIGRET and LEFROU [see this *Bulletin*, Vol. 19, p. 231]. Five points are dealt with: (1) The discharge of embryos is not continuous, but intermittent, so that, whereas OUZILLEAU reports their constant presence, the authors found them only at times. (2) The rash, particularly the "zones d'achromie en tache," which the former regards as due solely to onchocerciasis, may be met with in other leucodermic states, *e.g.*, leprosy, syphilis, yaws. (3) The "pseudo-icthyosis" associated with onchocerca, they maintain, is not difficult to distinguish from lichen tropicus and similar conditions, whereas OUZILLEAU does not regard it as characteristic. (4) The local lesions are ascribed by OUZILLEAU directly to the action of the embryos, whereas the authors consider them to be the results of scratching induced by the itching. (5) They discuss the advisability of retaining the term "craw-craw" as a distinct condition.

R. T. L.

CALDERÓN (Victor Manuel). **Contribucion al Estudio del Filárido onchocerca sp. Dr. Robles, 1915, y de las enfermedades que produce.** [Onchocerca sp. Dr. Robles, 1915, and the Diseases Caused by It.] [Doctorate Thesis, 1919.]—107 pp. With 1 map & 35 other figs. 1920. June. Guatemala: Tipografia Sanchez & de Guise.

In the first part of this work a description is given of a Nematode differing from *Onchocerca volvulus* in certain particulars, together with an account of the associated disease. In the second part the eye conditions to which it gives rise are dealt with in greater detail. This "American Onchocerca" was discovered by Dr. ROBLES in the environs of Guatemala in 1915. It predominates at heights between 2,800 and 3,600 ft. above sea-level, where, on some estates, over 70 per cent.

of the inhabitants are infected. The following table shows the chief differences between the *O. volvulus* and the new species :—

——	*O. volvulus.*	New Species (*O.* sp. Dr. Robles, 1915). *O. caecutiens* Brumpt, 1919.
Size of Tumour	Up to that of a pigeon's egg	Up to 23 mm. long, 18 mm. broad.
Geographical Distribution.	Africa ; on river-banks and about sea-level.	American Continent ; at an altitude of 1,800 to 4,000 ft.
Eggs	Polar prolongations, like an "orange wrapped in tissue paper with twisted ends."	Round or oval, 48 to 56 microns.
Embryos ..	Average, 300 microns ; no sheath, pointed tail ; V-spot at junction of anterior one-fifth with posterior four-fifths.	240–270 microns long, by 6 microns broad ; no sheath, pointed tail ; clear space at anterior ¼, and two others close together near posterior extremity.
Male	3–3·5 cm. long by 0·13 mm. broad ; three papillae each side of the cloaca, three pairs of post-anal papillae ; two unequal spicules.	Average, 23 mm. long by 0·13 mm. broad ; one spicule only, with an additional piece about half the size and apparently adherent to the wall of the cloaca and not protrusible.
Female	6–7 cm. long, by 0·30 mm.; vulva, 700 microns from anterior end.	Varies from 6 to 32 cm. in length ; vulva, 370–430 microns from anterior end.

The tumours varied in number from 1–19, and were almost always found on the head, usually, but not invariably, above the aponeurosis, their situation indicating, in the author's opinion, that infection is conveyed by some nocturnal biting insect. The author's method of obtaining the nematode was to excise a tumour, attach a thread to it, and administer it to a dog and withdraw it after partial digestion had liberated the parasite, or, in case the animal bit through the thread and retained the tumour, the dog was killed in 3–4 hours, and the partly digested tumour examined.

The mode of transmission has not yet been worked out ; water, lice, mosquitoes, and various flies were all tested, but none yielded positive results.

The condition set up is of an erysipelatous nature, though suppuration does not occur. As a rule, the swellings are painless ; "erysipelas" only arises in tumours containing both male and female, and it is

believed that the acute state is due to the discharge of embryos into the circulation, though the author has not been able to verify this, as the patients did not come under his notice sufficiently early. At the onset there is a rise of temperature to 38°·5–39° C., with intense headache, but no rigor nor enlargement of lymphatic glands. When the cases came under observation the features were swollen and discoloured, the eyes closed, partly from swelling, partly owing to photophobia and blepharospasm. Within 7–8 days after excision of the incriminated tumour all the symptoms cleared up.

Some cases do not present such an acute onset, but are, as it were, chronic from the start. The skin becomes gradually thickened with the formation of rugae, and of a pallid, greenish tinge, with oedema. There may be exacerbations of these symptoms at intervals of one or two months. Eye-symptoms commonly associated are punctate keratitis, corneal leucoma, acute or chronic iritis, photophobia, pigmentation of sclerotics, and considerable impairment of vision. These symptoms are said to be due to a toxin liberated by the parasite. There is a marked eosinophilia of 50 per cent. or over. [See also this *Bulletin*, Vol. 14, p. 157.]

H. Harold Scott.

Tournier (E.). **Le traitement du Ver de Guinée par les sels d'antimoine.** —*Bull. Soc. Path. Exot.* 1922. Nov. 8. Vol. 15. No. 9. pp. 809–815. [4 refs.]

Owing to the disadvantages associated with the use of the tartar emetic—pain when administered intramuscularly, discomfort and vomiting when taken *per os*, uncertainty of action by the intravenous route—the authors employed "Kermès"* in doses of 15–20 cgm. in water daily for children, 40 cgm. for adults, and found that it is quite as active therapeutically as tartar emetic, facilitates extraction and favours expulsion, prevents septic complications, and improves the general condition of the patient. Brief details are given of 17 cases.

R. T. L.

Duff (D.). **Short Note on the Use of Antimony Orally in the Treatment of Guinea-Worm.**—*Gold Coast Rep. on the Med. Dept. for the Year 1921. Appendix B.* p. 53.

Owing to the objection evinced by many natives to even such a minor operative procedure as intravenous injection, Dr. Duff treated several cases [number not given] of guinea-worm infection with tartar emetic by mouth, with very satisfactory results. The drug (gr. 10) was made up in a 10-oz. mixture with 2½ drs. of sodium bicarbonate. The patient was directed to pour 2 oz. of this into a whisky bottle, to fill it up with water, and drink it during the day in small quantities so as to avoid nausea and vomiting. A second course was given if the worm was not killed; if this also proved ineffectual resort was then had to the intravenous route, 4½–6 grs. being thus administered, so that the total, 26 grs., did not exceed the toxic limit.

R. T. L.

* Kermes mineral = Stibium sulfuratum rubrum, consisting chiefly of antimony trisulphide.

Koino (Sui). [**Experimental Infection with Ascaris in Human Body, with Special Reference to the Clinical Symptoms of Ascaris Pneumonia. (A Preliminary Report.)**]—*Tokyo-Iji-Shinshi* (*Tokyo Med. News*). 1922. Oct. No. 2299. [Summarized in *Japan Med. World.* Tokyo. 1923. Feb. 15. Vol. 3. No. 2. p. 30.]

A robust young man, aged 21, was given 500 eggs of *Ascaris suum* [*suilla*], and the author himself swallowed about 2,000 eggs of *Ascaris lumbricoides*. In the former a slight form of pneumonia developed on the ninth day after feeding, and there was shivering, cold, with rise of temperature to 39·1° C. In the author's case a slight rise of temperature set in on the third day. On the sixth day fever, with shivering, developed, lasting for nine days with a maximum temperature of 40·2° C. From the fifth day the pneumonic symptoms were so severe that his life was in danger. In the case in which *Ascaris suum* eggs were used no larvae could be demonstrated in the sputum, but in the author's case a larva was found in the sputum on the third day, and these increased in number so that on the evening of the fifth day 178 larvae were counted in 155 cc. of bloody sputum. The author is of opinion that the ascaris larvae from the pig and from man migrate in the human body as in experimental animals, producing the same pathological changes. The larvae may desquamate during their migration.

R. T. L.

Tochihara (Isamu) & Takagi (Shyozo). [**On the Transmigration Route of the Larvae of Ascaris in the Animal Body. I. Communication.**]—*Saikingaku Zasshi.* (*Jl. of Bact.*). 1922. Sept. No. 324. [Summarized in *Japan. Med. World.* Tokyo. 1923. Mar. 15. Vol. 3. No. 3. p. 54.]

The authors fed mice with a number of fully matured eggs of ascaris, and at various intervals the animals were killed for examination. It was found that the eggs hatch in the lumen of the intestines, whence the larvae bore through the intestinal walls and reach the mesentery through the lymphatic system. Some then penetrate into the mesenteric glands. A few which found their way into the peritoneal cavity bore into the liver, in which case some went into the hepatic veins. Sections of the stomach demonstrated the larvae in the act of piercing the wall.

R. T. L.

Coppin (H.). **Accidents pseudo-comateux et rétention d'urine par ascaridiose.**—*Bull. Soc. Méd. Chirurg. Indochine.* 1922. Oct. Vol. 1. No. 1. pp. 2–6.

A boy of 15 years was suddenly attacked by somnolence and retention of urine. There were no definite symptoms of organic disease. Twenty-four ascarides were expelled by santonin within four days; the patient gradually recovered, and in a week from the onset was in his usual health. The description is strongly suggestive of an hysterical condition, but the author thinks it simpler to ascribe the symptoms to "reflex phenomena of intestinal origin acting on the bladder innervation," and due to, not merely associated with, ascarides.

R. T. L.

Guiart (J.). [**Ascaris outside of Human Intestine.**]—*Jl. de Méd. de Lyon.* 1922. Dec. 20. Vol. 3. No. 71. p. 747. [Summarized in *Jl. Amer. Med. Assoc.* 1923. Feb. 24. Vol. 80. No. 8. pp. 587–588.]

By addition of human blood to normal saline and changing the solution twice daily, Guiart kept specimens of ascaris from the human intestine alive for several days.

R. T. L.

Ogata (Seiji). [**A Study on the Development of Ascaris. I. Communication.**]—*Tokyo-Iji-Shinshi* (*Tokyo Med. News*). 1922. Aug. No. 2293. [Summarized in *Japan Med. World.* Tokyo. Dec. 15. Vol. 2. No. 12. p. 346.]

The original of this paper is in Japanese and the English review merely states that the paper deals with the conditions best suited for the development of the ascaris eggs and the young larvae and on the staining of these larvae, but no details are given.

R. T. L.

Schmidt (W. Th.). **Neue Beiträge zur Oxyuriasis.**—*Münch. Med. Woch.* 1923. Apr. 20. Vol. 70. No. 16. pp. 495–496. With 1 chart in text. [4 refs.]

The author, after testing his blood for eosinophiles and finding the percentage normal, infected himself with oxyuris (3). The number of eosinophiles rose after the first week, and by the end of the fifth week was 28 per cent. Thereafter until the ninth week it fell, and he reinfected himself. An increase again occurred, but never above 17·5 per cent., and the curve of rise and fall was irregular and did not return to normal for some three months.

A second contribution consists of a report of a case of a fistula, opening 6 cm. below and to the right of the umbilicus and communicating with the ascending colon. discharging oxyuris in large numbers. Examination of the excised track revealed numerous ova in the walls and in tributary passages.

R. T. L.

Eastwood (E. H.). **The Relation between Appendicitis,** *Oxyuris vermicularis* **and Local Eosinophilia in the Appendix Wall.**—*Jl. Path. & Bact.* 1923. Jan. Vol. 26. No. 1. pp. 69–81. [46 refs.]

This paper is a contribution towards the solution of two problems, viz., (*a*) the relation, if any, as cause and effect, between appendicitis and the presence of *Oxyuris vermicularis* in the appendix; (*b*) the significance of local appendicular eosinophilia.

As regards (*a*), the evidence adduced goes to show that no such relation exists. Of 73 cases of appendicitis the parasite was found in 14, while of 50 normal appendices it was found in a like number, *i.e.*, relatively more often in the normal than in the inflamed viscus.

As regards (*b*), eosinophiles were present in a proportion of about 8 per cent. in normal appendices and 12 per cent. in those in which the parasite was found. In inflammatory conditions, however, the number was always high, rising to 21 per cent. in 24 hours, to 58 per cent. in the second week, then gradually decreasing with recovery. In cases of appendicitis associated with oxyuris there is a similar rise, but not quite so high. Local eosinophilia occurs in many conditions, and is, therefore, not pathognomonic of local helminth infection.

R. T. L.

Hajos (Karl). **Die Behandlung der Oxyuriasis mit Salvarsan.** [The Treatment of Oxyuriasis with Salvarsan.]—*Med. Klin.* 1922. Dec. 17. Vol. 18. No. 51. (No. 941.). pp. 1619–1620.

A woman, 27 years of age, who had suffered four years with oxyuris infection which persisted in spite of all the usual forms of treatment, was given 0·9 gm. salvarsan by mouth. A large number of worms were expelled, and, though frequent examinations were made, no more appeared for eight months. Another similar dose was then given, and since that time (ten months) there has been no recurrence. Salvarsan or neosalvarsan has been since employed in six other cases with equally good results.

R. T. L.

Lane (Clayton). **On Ankylostome Infestation : the Changing Problem.** —*Brit. Med. Jl.* 1923. Mar. 31. pp. 551–553. [15 refs.]

This is a stimulating discussion of some aspects of the hookworm problem as it stands at present. The writer shows that there is no conclusive evidence either for or against the opinion, which prevails largely, that less than ten worms are innocuous. He also controverts the statement that the microscope fails to detect 50 per cent. of light infestations, and holds that by his "standardizing count" the examination of 1 cc. of stool can detect infestation by a single normally ovipositing ankylostome. The prevalent idea that hookworm larvae are widely disseminated in the soil is next taken up, and experiments are quoted demonstrating that the condition is a localized ground infection, a "privy infection" in the wide sense.

The illogicality of the statement so generally made that, because an anthelmintic removes in two treatments 97 per cent. of the number of worms evacuated by three treatments, therefore this is the percentage of *all* the ankylostomes originally harboured, is demonstrated. Lastly, stress is laid on the fact that treatment and prevention lag far behind diagnosis, and that much of the work which has been done will have to be done again.

R. T. L.

Stekhoven (Schuurmans J. H.) & Stekhoven-Meyer (Schuurmans A. W.). **Anchylostomiasisbekämpfung und Bodeninfektion.** [Ankylostomiasis Campaign and Soil Infection.]—*Trans. 4th Congress Far Eastern Assoc. Trop. Med.* 1921. Vol. 1. pp. 485–495.

The percentage of infection in various parts of Java varied between 40 and 100. The inhabitants of the most infected districts were sallow, anaemic, and of poor physique. Of the inmates in the Tulungagung Hospital over 90 per cent. were passing ova. In most districts defaecation was performed anywhere on the ground, but mostly under bamboos, and in such situations, protected from the sun's rays, soil infection was heavy. The soil round privies exposed to the sun was usually sterile. In one village there was a spring, and women and children stood in the water to wash clothes, and the neighbourhood of this spring was treated as a public latrine. The larvae were very abundant in the soil here. Intensive sterilization of the soil [by a method not

stated] was found of little use without at the same time carrying out mass treatment. Better latrines were being provided and the ground around them and the springs cemented, but at the time of this report it was too early to look for definite results.

R. T. L.

Schwartz (Benjamin) & Tubangui (M. A.). **The Prevalence of Hookworm and other Intestinal Nematodes in Adult Filipinos.**—*Jl. Parasit.* 1922. Dec. Vol. 9. No. 2. pp. 83–92. [23 refs.]

The faeces of 649 students of the University of the Philippines, drawn from 46 provinces and subprovinces, were examined for the presence of nematodes; 84·76 per cent. were found infested with one or other of these parasites; 48·69 per cent. with hookworm, but producing no apparent ill-effects. This is ascribed, not to racial immunity of the Filipino, but to the small numbers of infesting parasites. 35·28 per cent. were found to harbour ascaris. This number is lower than that given by previous investigators, who dealt with children as well as adults, and the former show a higher rate of infection. Trichuris was present in 55 per cent.

R. T. L.

Valenzuela (A. J.). **Ankylostomiasis. I. Noticias sobre su existencia en el Ecuador. II. Algunas consideraciones sobre la patologia i la biologia del parásito. III. Tratamiento i dietética.**—Trabajo presentado al 6° Congreso Médico Latino-Americano reunido en la Habana del 19 al 26 de Noviembre de 1922. 24 pp. Guayaquil: Libreria e Imprenta La Reforma.

The general symptoms of ankylostomiasis were known to the aborigines, who treated the cases with "*paico*," which is nothing else than *Chenopodium abrassoides*. In 1922 some 40 per cent. of the cases examined at the hospital at Guayaquil were harbouring the hookworm, those most affected being workers in the rice fields and in the cocoa, coffee, and sugar plantations. Five forms of the disease are described: latent, benign, icteric, dysenteric, and nephritic.

The second part of the paper does not contain anything new. Oil of chenopodium was used for patients in fair general condition; for severe cases thymol was preferred. The "standard dose" of the latter was 3 gm., put up in six gelatin capsules, each containing 50 cgm. Three were given at 9 p.m., the remainder at 10 p.m., the patient having had the ordinary diet about 5 o'clock, and between 6 and 7 a.m. on the following day 45 gm. of magnesium sulphate in a single dose. The procedure is repeated after three or four days, as many as six times if necessary.

In severe cases with oedema a non-salt regimen is imposed and carbohydrates are reduced. Iron, haemoglobin, strychnine and arsenic are prescribed if the symptoms demand them.

H. Harold Scott.

Lane (Clayton). *Ancylostoma braziliense.*—*Ann. Trop. Med. & Parasit.* 1922. Dec. 30. Vol. 16. No. 4. pp. 347–352. With 1 fig. [9 refs.]

From a study of material from Brazil and Bengal further confirmation has been obtained that *Ancylostoma ceylanicum* is identical with *A. braziliense*, the differences which have been held to separate these as species being greatly variable individual distinctions.

R. T. L.

Mhaskar (K. S.). **The Diagnosis of Hookworm Infection.**—*Indian Jl. Med. Res.* 1923. Jan. Vol. 10. No. 3. pp. 665–686. [16 refs.]

The author, who is officer-in-charge of the Ankylostomiasis Inquiry, Trichinopoly, undertook the investigation of the efficiency of the various methods suggested and employed for the diagnosis of hookworm infection by faecal or blood examination, and concludes that faecal examination for ova is the surest, and that the most "simple, practicable, rapid and accurate" is the flotation method—"mixing faeces or the sediment from a centrifuged specimen on a slide with a mixture of saturated solution of common salt or magnesium sulphate with glycerin, the top of the slide being examined for ova."

R. T. L.

Mhaskar (K. S.). **A Note on the Correlation between Humidity and the Intensity of Hookworm Infection in Southern India.**—*Indian Jl. Med. Res.* 1923. Jan. Vol. 10. No. 3. pp. 821–824. With 1 chart in text.

A table is given of the numbers of ankylostomes removed from prisoners in the Trichinopoly gaol month by month for nearly five years, but the correlation evidenced by the figures does not appear to be a close one.

R. T. L.

Sisco (Dwight L.). **Incidence of Hookworm Disease among Persons who were cured Five Years Ago.**—*Jl. Amer. Med. Assoc.* 1923. Feb. 17. Vol. 80. No. 7. pp. 451–454. [2 refs.]

This is an interesting report of a re-survey of hookworm in Antigua, where a campaign for eradication had been carried out in 1915–17 when 29·8 per cent. were proved to be infested. Of 1,234 then freed of infection, 21·2 per cent. were found reinfested. A much smaller number of persons, however, were examined, and the author states: "For all practical purposes infection . . . among the persons who were cured of hookworm disease five years ago may be said to have reverted to the same incidence existing before any treatments were given." The logical inference, therefore, is that sanitation to reduce the possibilities of reinfestation to a minimum should precede treatment, and that sanitary efforts should not be relaxed when the intensive campaign terminates.

R. T. L.

Peyre (E. L.). **Contribution à la thérapeutique et la prophylaxie de l'ankylostomiase.**—*Bull. Soc. Path. Exot.* 1923. Feb. 14. Vol. 16. No. 2. pp. 98–100.

Ankylostomiasis is very prevalent in French Guiana. Among the population of St. Laurent 46·6 per cent., and among convicts 71·8–90 per cent., are infested, according to different observers. At Cayenne 75·3 per cent. of 7,669 patients examined were harbouring the hookworm.

As regards treatment, the author thinks that the dangers of oil of chenopodium, and the risks of combining it with castor oil, are unfounded. The best mode of administering it, he finds, is in doses of

4 cc. of the oil of chenopodium with 30 gm. of castor oil on two successive days. This method cured 83·4 per cent., as contrasted with 63 per cent. when smaller doses (3 cc.) on two days, or a larger dose (5 cc.) on one day only, were used.

R. T. L.

Richards (D. C.). **Report on Cases of Ankylostomiasis treated in the District Hospital, Penang, from Aug. 24, 1921, to Dec. 31, 1921.** —*Indian Med. Gaz.* 1922. Dec. Vol. 57. No. 12. pp. 460–461.

The routine treatment adopted was as follows : No food after 4 p.m. on the day preceding administration of the anthelmintic ; at 8 p.m., an oz. of magnesium sulphate in water ; at 7 a.m. the next day, a single dose of 2 cc. of oil of chenopodium in gelatine capsules, followed at 9 a.m. by another oz. of the sulphate. No food was allowed until the bowels had acted. Any sign of collapse after the oil was met by intramuscular injection of 1·5 cc. of pituitrin. If ova were found in the faeces after the fifth day the treatment was repeated.

Of 102 patients receiving the treatment one died of advanced anaemia and old-standing nephritis ; the remainder were discharged as cured, and only ten needed the second course.

R. T. L.

Lambert (S. M.). **Carbon Tetrachlorid in the Treatment of Hookworm Disease. Observations in Twenty Thousand Cases.**—*Jl. Amer. Med. Assoc.* 1922. Dec. 16. Vol. 79. No. 25. pp. 2055–2057. [2 refs.]

—— **Carbon Tetrachlorid in the Treatment of Hookworm Disease. Observations on Fifty Thousand Cases.**—*Ibid.* 1923. Feb. 24. Vol. 80. No. 8. pp. 526–528.

Among 20,500 persons treated there were 13,000 Fijians, 6,500 Indians, and 1,000 Europeans. Previous examinations had shown that the infestation rate among the first was 89 per cent., and among the second 93 per cent. ; that in Europeans is not stated.

Carbon tetrachloride in a dose of 0·2 cc. for each year of age up to a maximum of 4 cc. was administered in water, fasting. Sulphate of magnesium was usually given three hours later, because it was found that untoward symptoms, such as headache and giddiness, were thus obviated. As a rule, the drug acted as its own purge and caused very little discomfort. Of 823 patients who had undergone a single treatment over 90 per cent. were free more than six months later.

Another 22,000 were treated without ill-effects, but in the final 8,000 an impure form of carbon tetrachloride was used, and three deaths occurred. At the autopsy the liver was found to be extensively degenerated. Other patients showed serious symptoms, but recovered. The drug could be given to pregnant women with less risk of abortion than when oil of chenopodium was used. For heavy ascaris infection the two drugs together prove more efficient than either singly.

R. T. L.

Smillie (W. G.) & Pessoa (S. B.). **Treatment of Hookworm Disease with Carbon Tetrachloride.**—*Amer. Jl. Hyg.* Baltimore. 1923. Jan. Vol. 3. No. 1. pp. 35–45. [12 refs.]

Carbon tetrachloride was given to a large number of patients harbouring *Necator americanus ;* 3 cc. was found to be the best dose

for adults, and removed over 95 per cent. of worms. It is stated that larger doses than 3 cc. may be dangerous, especially in alcoholic subjects, in whom 1·5 cc. has produced headache, nausea, vertigo and somnolence. To the larger doses reactions are variable, some having received as much as 50 cc. without ill-effects. Two conflicting statements appear in the paper. It is stated (p. 42) " there is as yet no reported fatality from ingestion of the drug," and (p. 45) " A later and more serious manifestation is fatty degeneration of the liver, which first manifests itself two or three days after treatment. This condition rarely occurs and is seldom fatal."

R. T. L.

Cooper (A. T.) & Vadala (A. J.). **The Treatment of Hookworm Disease by Carbon Tetrachloride.**—*Milit. Surgeon.* 1923. Feb. Vol. 52 No. 2. pp. 187–189. [1 ref.]

The authors state that by treating cases of hookworm infection with a single dose (3 cc.) of carbon tetrachloride they have obtained a cure in 100 per cent. It was equally effectual when given after food as when fasting. No mention is made of the number of cases dealt with.

R. T. L.

Phippen (Harry G.). **The Treatment of Ankylostomiasis with Beta-Naphthol and Thymol.**—*Brit. Med. Jl.* 1923. Mar. 3. p. 371.

Cases which had been previously treated without success by thymol were found to clear up when this was given with beta-naphthol. The method adopted was as follows : In the evening a purgative of calomel 5 gr. and sodium bicarbonate 10 gr. ; next morning at 7 a.m. sodium sulphate 3 dr. in water. At 8 a.m. 30 gr. each of thymol and beta-naphthol in a mixture, the patients being kept in bed without food or drink till 4 p.m., when they were allowed fluids. They are instructed to report again in a week. The figures given are confusing, but it is claimed that 89 per cent. are cured by four treatments.

R. T. L.

Leach (C. N.) & Hampton (G. G.). **Betanaphthol in the Treatment of Hookworm Disease.**—*Jl. Amer. Med. Assoc.* 1923. Jan. 6. Vol. 80. No. 1. pp. 8–11.

Of 397 prisoners at the Bogambra Prison, Kandy, Ceylon, 93·7 per cent. were found to harbour hookworms. Without any preliminary dieting or purging 50 gr. of betanaphthol in powder were given at 6.30 a.m. before any food ; 31·6 per cent. showed no further ova in their stools. Eight days later 60 gr. were given to 139 of those still positive and, as a result, in 38·1 per cent. the faeces were free of ova. The drug was more effectual on ascaris than on the hookworm. It is interesting to note that no ancylostoma were found ; of 385 worms examined all were necator.

R. T. L.

Miller (Frederick A.). **Alivio y dominio de la Anemia Tropical en Colombia.** [The Control of Tropical Anaemia in Colombia.]—*Repert. de Med. y Cirug.* 1922. Mar. & Apr. Vol. 13. No. 6 (150) & No. 7 (151). pp. 312–321 ; 346–366.

During the Rockefeller Foundation's Hookworm campaign in Colombia 53,390 persons were examined ; 49,940 (92 per cent.) were found infected, 47,882 were treated with oil of chenopodium, and 37,488, or 78 per cent., of them were freed from the parasite.

Seventy-six per cent. of the total number examined were found harbouring trichuris, and 72 per cent. ascaris. The former of these, unaffected by the anthelmintics usually employed, was readily removed by the latex of the *Ficus glabrata* found in Colombia. Details are given, in the text and in tables, of the numbers treated in each of 23 districts of the country.

H. Harold Scott.

Rockefeller Foundation, International Health Board. **Bibliography of Hookworm Disease.** Publication No. 11.—417 pp. 1922. New York City.

The Bibliography of hookworm now put at the service of hygienists and scientific workers throughout the world has been in course of compilation since the organization of the International Health Board in 1913. The work contains 5,680 entries, and will prove invaluable to students and research workers in the tropics. A large part of the literature dealt with is controversial, due chiefly to the fact that discussion which has centred mainly around various practical problems connected with the control of the disease has been carried on under a great variety of difficult conditions, and little opportunity has arisen for scientific enquiries to be undertaken to settle the points at issue. There appear from the number of entries recorded for different years to have been four peaks of activity in publication, viz.: in 1882, after the outbreak in the St. Gothard tunnel workers; in 1903, when it was discovered in European mines; in 1910, when Looss's work was reaching its culmination; and in 1917, when American activities in the field were at their height. There is an admirable introduction giving in brief outline the history of the discoveries of the parasites; the origin of faecal diagnosis; the development of treatment with vermifuges; the spread of hookworm to the mines after the St. Gothard tunnel epidemic; Looss's remarkable work which established the fact and importance of dermal infection; and the origin and progress of the campaigns against the infection first in the United States and latterly in other parts of the world. The Bibliography is arranged into subdivisions of subjects, and under each heading the titles are arranged by authors. This, of course, has necessitated frequent repetition of the same title. There is a useful Author and Geography list of cross references, and an alphabetical list of periodicals referred to in the text. The work is printed beautifully and is of handy shape. Necessarily many references appear which are of little or no scientific value, but these have at least an interest to the historian of medicine. There is no definite indication of the date upon which the collection of references ceased, but one perhaps can assume that the period covered extended to 1922.

R. T. L.

Anschütz. **Ueber chirurgische Komplikationen bei Trichocephalus-und Oxyurisinfektionen (Invagination bei Trichocephalus- und Oxyuristyphlitis, periproktitische Oxyurisabscesse).**—*Klin. Woch.* 1922. Oct. 28. Vol. 1. No. 44. pp. 2174–2176.

Baugh (W. P.). **Report of Case of Obstruction to Intestine due to Ascaris.**—*Jl. Amer. Med. Assoc.* 1923. Jan. 20. Vol. 80. No. 3. p. 181.

Baylis (H. A.). **Notes on the Collection and Preservation of Parasitic Worms.**—*Parasitology.* 1922. Dec. Vol. 14. No. 3 & 4. pp. 402–412. With 1 plate.

Becher-Rudenhof (Frida). **Ein Beitrag zur Behandlung der Oxyuriasis.**—*Wien. Klin. Woch.* 1923. Vol. 36. No. 9. pp. 165–166.

Bird (Fred D.). **Note on a Form of Pelvic Hydatid Cyst and its Treatment.**—*Med. Jl. Australia.* 1922. Sept. 9. 9th Year. Vol. 2. No. 11. pp. 289–293.

BURGA (Buenaventura). **Algunos factores de la diseminación de la anquilostomiasis en la provincia de Moyobamba.**—*Cronica Méd.* 1923. Mar. Vol. 40. No. 717. pp. 95–97. [1 ref.]

CAWSTON (F. G.). **Snail Parasites. How and Where the Host of Bilharzia and the Fluke carries Dangers.**—*Farmer's Weekly.* 1922. Nov. 8. Vol. 24. No. 609. p. 840.

CONIGLIO (Casimiro). **Un caso di asma da tenia intestinale.**—*Giorn. di Clin. Med.* Parma. 1923. May 20. Vol. 4. No. 7. pp. 266–269.

FREUDENTHAL (F.). **Bemerkenswerter Fall eines *Ascaris lumbricoides* in der freien Bauchhöhle.**—*Med. Klinik.* 1923. Apr. 15. Vol. 19. No. 15. pp. 501–502.

HAGE. **Soll und kann eine Verwurmung von Schulkindern bekämpft werden? [Ausgeführt an einem Beispiel aus Thüringen.]**—*Muench. Med. Woch.* 1923. Jan. 19. Vol. 70. No. 3. pp. 85–87; and *Cent. f. Bakt* I. Teil Orig. 1923. Jan. 30. Vol. 89. No. 7–8. pp. 272–285.

KAZAMA (Yoshiaki). [**On a Case of Primary Carcinoma due to *Schistosomum japonicum*, which caused Liver Cirrhosis.**]—*Tokyo Iji-Shinshi* (*Tokyo Med. News*). 1922. Nos. 2294 & 2295. [Summarized in *Japan Med. World.* Tokyo. 1922. Dec. 15. Vol. 2. No. 12. p. 346.]

KAZAMA (Yoshiaki). [**On a Case of Tuberculosis of the Hernial Sac in *Schistosomiasis japonicum.***]—*Iji Shimbun* (*Med. News*). 1922. Aug. No. 1100. [Summarized in *Japan Med. World.* Tokyo. 1922. Dec. 15. Vol. 2. No. 12. p. 348.]

MILOSLAVICH (Edward L.). **Ascaridiasis hepatis.**—*Wien. Med. Woch.* 1923. Vol. 73. No. 1. pp. 26–31. With 1 fig.

NICOLL (William). **Recent Progress in our Knowledge of Parasitic Worms and their Relation to the Public Health.**—*Parasitology.* 1922. Dec. Vol. 14. No. 3 & 4. pp. 378–401.

NOGUE (M.). **Kystes hydatiques du foie, de la rate et du péritoine chez un noir du Congo.**—*Bull. Soc. Path. Exot.* 1923. Feb. 14. Vol. 16. No. 2. pp. 144–146.

PELLÉ. **Note sur le traitement chirurgical des kystes hydatiques du poumon.**—*Arch. Méd. et Pharm. Nav.* 1922. July–Aug. Vol. 112. No. 4. pp. 265–274.

TURNER (C.). **I. Hydatid Diseases. Part I. Surgical Cases. Part II. Cases of Hydatid Disease met with** *Post-mortem.*—*Med. & Scientific Arch. of the Adelaide Hospital. Supplement to the Ann. Rep. of the Adelaide Hospital for the Year 1921.* pp. 1–4.

VON WINTERFELD (Hans Karl). **Ein schwerer Fall von Askaridosis.**—*Klin. Woch.* 1923. May 21. Vol. 2. No. 21. pp. 980–981.

MISCELLANEOUS.

Soares (J.). **Aperçu clinique des "Mycoses."**—*Trans. 4th Congress Far Eastern Assoc. Trop. Med.* 1921. Vol. 2. pp. 123–128. With 8 figs.

A clinical account of a process of indolent ulceration, observed for the most part in Chinese patients, the mycotic origin of which was consistently verified by cultivation tests on Sabouraud's medium. The early stage of tumefaction and softening is suggestive of syphilitic gumma, but pain is absent, the lymphatic glands are unaffected, and the initial tumour is of a different consistence and is non-adherent. The non-participation of the lymphatic glands and the absence of copious suppuration is distinctive from tubercle.

This unspecified mycosis may be localized in the skin, or may involve muscle and even periosteum, and illustrative cases of all three phases are given. In the skin it begins as a well-defined, non-adherent, painless, non-inflammatory tumour of firm consistence, and tends to terminate as a fistulous ulcer infiltrated with yellow odourless pus ; several such developed in the same patient. In the case, briefly described by the author, where the muscle was involved, an odourless watery fluid containing grumous clots exuded from the fistulae; and in the case where the periosteum was affected there was much grumous pus. The treatment adopted was pot. iod. internally and iodine locally.

A. Alcock.

Acton (Hugh W.) & Chopra (R. N.). **The Production and Pharmacological Action of Khesari Amine.**—*Indian Med. Gaz.* 1922. Nov. Vol. 57. No. 11. pp. 412–415. With 6 figs. [4 refs.]

In a former paper [see this *Bulletin*, Vol. 20, p. 46] Acton indicated that the poison which causes lathyrism is probably a vegetable protein base (amine) produced by enzyme action both before and during germination. This substance was shown to be water-soluble and thus to differ from the poisonous plant alkaloids. Here the authors give an account of the isolation of the amine and of its pharmacological effects on animals. For the method of isolation the paper must be consulted ; the final product was an apparently pure crystalline amine hydrochloride. The result of the tests on animal tissues was to show that the amine has a slightly depressant effect on the excised heart (rabbit) and produces a slight rise of blood-pressure (cat), indicating vaso-constriction elsewhere than in the limbs and kidneys. Large injections were made into a monkey, a guinea-pig, white rats and mice. In most instances there was transitory spasticity of the hind limbs ; the guinea-pig was completely paralysed in these parts for some hours, but had completely recovered three days later. In given samples only half or less than half the grains germinate. The yield of amine from seeds germinated 48 hours was nearly twice as much as that from the non-germinated.

A. G. B.

TORREGROSA (Arturo). **Diagnóstico diferencial de las Pirexias Tropicales más comunmente observadas en Puerto Rico.** [Differential Diagnosis of the Febrile Conditions commonly met with in Porto Rico.]—*Bol. Asoc. Med. de Puerto Rico.* 1920. June. Vol. 14. No. 126; Sept. No. 127; Dec. No. 128; 1921. Feb. Vol. 15. No. 129; Apr. No. 130; June. No. 131; Aug. No. 132; Oct. No. 133; Dec. No. 134; 1922. Vol. 16. Feb. No. 135; pp. 25–57; 67–102; 115–148; 1–21; 46–66; 93–116; 145–170; 197–220; 263–288; 17–43.

This series of papers constitutes almost a treatise on the most frequently encountered diseases of Porto Rico associated with fever, embracing as they do, not only "tropical pyrexias," but also conditions not peculiar to tropical countries, where they are liable to be overlooked. Although due regard is paid to the value of laboratory work, it is rightly spoken of as a help in diagnosis and not a substitute for clinical investigation.

The author's division of his subject into the three main groups of diseases (i) with fever of intermittent type; (ii) with fever of continuous or remittent type; and (iii) those with an irregular type of fever, necessarily involves a certain amount of overlapping and repetition.

In the first group malaria naturally is the chief item, though medical men in the tropics are too prone to regard all such febrile conditions as malaria. (OSLER's statement with respect to abscess of the liver that he had rarely met with a case which had not been drenched with quinine, the author applies very aptly to tuberculosis, which is widespread in Porto Rico.)

The author deals first with the points of difference between malaria, especially of the pulmonary type, and tuberculosis in an early stage.

In differentiating febrile filarial conditions the rise and fall of eosinophiles should, he states, make us suspect filariasis. In malaria, on the other hand, there is a diminution of eosinophiles. When there is a difficulty in arriving at the diagnosis in cases of suspected filariasis the author recommends a process analogous to that of ABL for malaria. Adrenalin or pituitrin is injected with a view to driving the embryos from the capillaries of the lungs and other viscera to the peripheral circulation.

Cases occur which form, as it were, a connecting link between this first group of cyclical intermittent and the second of remittent types of fever, partaking of the characters of both. As examples are mentioned intestinal infections and "visceral sepses."

Passing on to the author's second main group—continuous and remittent fevers—he states in the first place that malaria with more localized manifestations than usual in lungs or liver is often overlooked, and the case regarded as one of pneumonia, hepatitis, angiocholitis, and so on.

In this section the author deals first with continued fever due to malaria of minor degrees of severity, and the differentiation of this from gastro-hepatic infections, enteric (typhoid and paratyphoid), acute endocarditis, generalized tuberculosis, the pneumonias, appendicitis, puerperal fevers and *B. coli* septicaemia; and, secondly, with the "accès pernicieux" of malaria and the diagnosis of these varieties from conditions resembling them.

The question of differentiation between malaria and typhoid occupies several pages. The points of contrast between "classical typhoid"

and the disease as seen in the tropics are not as a rule so distinct as given in the author's table. A very interesting description is given of a small outbreak in epidemic form of *B. coli* septicaemia, the diagnosis being made in the first instance by spleen puncture and cultivation.

It seems a pity to continue the employment of the term "Typhomalaria" to indicate the coexistence of malarial and typhoid infection, even if the concession is made of placing it in inverted commas; still less necessary is it to coin the analogous "Colimalaria."

The discussions on various forms of pernicious malarial fevers (adopting JAMES's definition of the term) are excellent; particularly instructive is that on the form resembling encephalitis lethargica. In his final remarks upon them he calls attention to methods of examination previously mentioned—by thin and by thick smears, and by the adrenalin method—and also suggests others more difficult of performance [for which the serious state of the patient would hardly allow time], namely, by cultivation of the parasite, and by SWELLENGREBEL's "xeno-diagnostic" method (submitting the patient to punctures by Anopheles and after the lapse of at least four days dissecting the mosquito for oöcysts and pigment granules (!)).

In the last part of this section the author deals with the question of blackwater fever, stating first the various opinions as to its nature. He then discusses the diagnosis between bilious haemoglobinuric fever and yellow fever, Weil's disease, acute yellow atrophy of the liver, and febrile haematurias. Apart from clinical phenomena the discovery of the *Leptospira icterohaemorrhagiae* in the urine of Weil's disease and of leucin and tyrosin in acute yellow atrophy are important features in diagnosis.

The third group—conditions with irregular fever—comprises those with an irregular course of temperature as an integral part of the cycle, not such as exhibit afebrile phases in an ordinary intermittent or continuous course. Thus, he includes undulant fever, influenza, dengue, pappataci fever, "seven day fever," the exanthemata (measles, small-pox, scarlatina, chicken-pox), and helminthiasis. He quotes his own experiences and also those of others (JAMES, LEGRAIN, DELILLE) to demonstrate the irregularity produced by the treatment of malaria with inadequate doses of quinine, thereby causing the temperature to lose its distinctive characters of intermittency and periodicity. This point is particularly directed to those practitioners who, without examining the blood to aid the diagnosis, give quinine in all cases of fever, but, feeling that they are working in the dark, are at the same time afraid to prescribe the drug in sufficient doses and so render the recognition of the parasite still more difficult.

The author's remarks on the various helminthic conditions are all to the point, but from a diagnostic aspect there is nothing special to record, the question being decided on the usual clinical signs and laboratory findings.

The remaining affections in this group do not call for further comment here; the question of diagnosis being decided largely on clinical grounds, which are dealt with very thoroughly.

As the author himself states, it is a difficult matter to give a résumé of the febrile conditions relegated to this group, for in some the symptomatology is not distinctive (*e.g.*, the "nervous fevers" of hysteria, neurasthenia), in others the temperature may be at times intermittent or continuous, but irregular also (*e.g.*, intestinal parasitic infections, influenza), while yet in others their very rarity is an obstacle to diagnosis (*e.g.*, undulant fever).

A few words in conclusion; the problem which the author set himself, of solving the question of the differential diagnosis of febrile conditions in the tropics, was a difficult one, and could only be undertaken by a physician of wide experience endowed with powers of sound clinical observation. This task Dr. Torregrosa has performed most satisfactorily, and if this series of papers were to be amplified by the inclusion of a few more cases described in detail and temperature charts illustrative of the conditions dealt with, the result would form an excellent text book of Tropical Pyretology.

H. Harold Scott.

Aconcha (Luis E. S.). **Algunas consideraciones sobre la higiene en Colombia.**—*Repert. de Med. y Cirug.* 1921. Dec. Vol. 13. No. 3. (No. 147.) pp. 141–153; and 1922. Jan. No. 4. (No. 148.) pp. 205–221.

Endemic dysentery, hookworm disease and malaria—and in some parts relapsing fever and *carate* (pinta)—form a serious obstacle to the colonization and exploitation of the rich and extensive territory of Colombia east of the river Magdalena.

The most heavily infected regions are those situated at an altitude of 800 metres or less above sea-level, with a temperature ranging between 30° and 36° C. Lighter infection prevails in subtropical regions at an altitude of 800–1,500 metres, with a temperature of 24°–20° C., hookworm being most frequent, with malaria second. In the more healthy regions lying at an altitude of 2,000 metres, with a temperature not exceeding 24° C., amoebic dysentery and hookworm are most prevalent, and malaria is comparatively benign.

A. G. B.

de Langen (C. B.). **A Medical Geographical Map of the World.**—*Trans. 4th Congress Far Eastern Assoc. Trop. Med.* 1921. Vol. 2. pp. 199–210.

This paper is unusual in that cosmopolitan and not parasitic diseases are discussed, their respective frequency in Java and the West being compared.

Cholelithiasis.—Gallstones are very rare in the Dutch East Indies. Among 422,000 patients in Javan hospitals between 1906 and 1916 this diagnosis was made in 30. In 200 and 242 post-mortems gallstones were found once each. In Europe the deadhouse statistics vary between 7 and 20 per cent., and in Japan this figure is 3 per cent. In Europe, moreover, cholesterine stones predominate; in Java, bilirubin calcium stones. In Japan 65 per cent. of the stones are of the latter variety. European gall contains 3–4 times more cholesterine than Java gall, and the cholesterine blood value for the Javan is only 60 per cent. of that of the European. This difference depends upon the food; with a diet richer in cholesterine the blood value rises. It is inferred that infection is not the principal factor in the formation of gallstones but the richness of the food in lipoids.

Liver cirrhosis.—A well known disease in Java, where alcohol is little used. The author would incriminate "the numerous intestinal disturbances which occur in the tropics."

Ulcer of the stomach.—In Europe and U.S.A. these cases form 1–7 per cent. in middle-aged people. Among the 422,000 hospital patients in Java, gastric ulcer was diagnosed 48 times. In Japan also the disease is rare. Such theories as difference in acidity, traumata,

sedentary living, are not accepted by the author, who inclines to the vagotonic theory "in which spasm and changes in the motility of the stomach play the principal rôle," but he does not develop this somewhat nebulous suggestion.

Cancer in the tropics.—In the 422,000 Javan patients referred to there were 460 cases of malignant tumour, or about 1 in 1,000, a low proportion not well accounted for by the shorter span of the native's life. Cancer of the stomach was not seen in 70,000 patients. Primary cancer of the liver was common and usually found with atrophic cirrhosis.

Stone in the bladder and kidney.—Both are common in the Orient, especially those of the bladder, and in boys. The author asks whether this depends on the higher concentration of the urine (900 cc. passed in 24 hours as against 1,500 in Europe) or on the composition of the food. He suggests, too, a study of kidney disease in various races in relation to food.

Diabetes.—This disease is common in the European colonist, and only less so in the Chinese and Arabs in Dutch East Indies, but in the hospital statistics there were only 39 cases. This was also McCay's experience in Calcutta; diabetes was common among the well-to-do, rare among the poor. Is an over supply of fats and proteins the cause in the wealthier people?

The problem of calcium.—In the Dutch East Indies the staple diet, rice, is poor in calcium. So is the drinking water and the vegetation. Horses need a calcium ration. Spasmophilia is very common in Java; in Batavia 17·5 per cent. of children die in convulsions. The remedy is a ration of calcium which, according to the author, is provided in America by a law prescribing that ordinary salt must be mixed with a certain percentage of calcium. In the Dutch East Indies the coagulation time is longer than in Europe. Bleeding after operation is sometimes severe. Haemoptysis is frequent in tuberculosis, so much so that the name for tuberculosis in the vernacular means "coughing with blood." Calcium deficit must be the cause. Calcification is rare in the autopsies of tuberculous patients, nor is calcification of the first rib cartilage found. Calcification in arteriosclerosis is rare.

Amyloid is never met with in Java, though the conditions which are described as leading to it are very common.

Prostatic hypertrophy.—In the 422,000 patients there were six cases of enlargement of the prostate, a low figure again not entirely explained by the relatively short life of the Javan.

Finally, the author refers to the absence of scarlet fever, and the rarity of locomotor ataxia and general paralysis, and states that among the 422,000 hospital cases only 139 were diagnosed as appendicitis.

A. G. B.

Cleland (J. Burton) & Campbell (A. W.). **The Australian Epidemic of Acute Encephalo-Myelitis: A Consideration of the Lesion.**—Reprinted from *Jl. Nervous & Mental Disease.* 1920. Feb. Vol. 51. No. 2. pp. 137–145.

In two epidemics of a peculiar kind of encephalo-myelitis having a mortality of 70 per cent. a remarkable feature was the infrequency of evidence of paralysis, while a post-mortem phenomenon was distension of the perivenous sheaths, particularly in the corpus striatum and

pons and medulla, by lymphocyte-like cells. This local cellular reaction is by the authors regarded as evidence of response to some irritant originating in or from the morbific organism, and the signs and symptoms of the disease are attributed to the mechanical and physiological effects of this cellular proliferation.

The disease was communicated experimentally to a calf, a horse, to monkeys (in which the predominant manifestation was intense inco-ordination), and to sheep. But in a series of sheep, infected in identical circumstances, while some individuals contracted the disease and died, and some were affected but slightly, others were completely indifferent and maintained their insusceptibility under subsequent severer conditions. From this insusceptibility of individual sheep, which the authors would appear to interpret as an impotence of the specific micro-organism to provoke the local perivenous cellular reaction, the authors offer a considerable explanation of the fact that in epidemics of poliomyelitis and encephalomyelitis, few individuals contract the disease, although so many (at any rate in the former disease) appear to harbour the specific micro-organism.

A. A.

THOMSON (J. W.). **Notes on Cases of Deep Abscesses.**—*Nigeria Ann. Med. & San. Rep. for the Period 1919–1921.* pp. 47–48.

In a single year J. W. Thomson has had to treat 13 cases of "deep abscess" (pyomyositis), six of which were fatal cases. The pus in one case was sent to the laboratory at Lagos, and was reported by CONNAL to give a pure culture of staphylococcus. One case seemed to improve under a mixed antistaphylococcus vaccine; another did not. Potassium iodide had no effect, nor had antistaphylococcus serum. In a few cases evacuation of the abscess cavity and sewing it up after swabbing with iodine was a complete success, but usually the cavity has to be drained. In one case there was a succession of 20 abscesses. The fatal cases terminate in exhaustion, or septicaemia, or some intervening infection such as pneumonia.

A. A.

KEANE (G. J.). **Annual Report on Venereal Disease Measures, Uganda, for 1921. (Appendix No. III.)**—*Uganda Protectorate Annual Medical and Sanitary Report for the Year ended 31st December, 1921.* pp. 59–73.

Dr. WEBB reports that of 790 cases of primary and secondary syphilis attending Mulago Venereal Hospital 279, or 37 per cent., defaulted after an average attendance of seven weeks, 37 were discharged after an average of nine and a half weeks and 6 had died. The 468 still attending did so for an average of 12–15 weeks; it is not possible to get patients to come for longer periods. The routine treatment consisted of $\frac{1}{4}$ or $\frac{1}{5}$ gr. of metallic mercury intramuscularly or 4 minims of calomel cream intramuscularly, or $\frac{1}{7}$ gr. of mercury cyanide intravenously, in each instance weekly. (The Baganda do not tolerate mercury except in doses $\frac{1}{5}$–$\frac{1}{4}$ of those given to Europeans.) Salvarsan and its substitutes usually were issued only on payment. At the end of a three months' course the patient would have had 3 gr. of Hg or 2 of HgCN and 0·3–0·6 gm. of salvarsan.

After a preliminary comparative trial had shown that the Sachs-Georgi reaction gives readings 10–19 per cent. lower than the Wassermann in all cases of syphilis, the majority of serums were tested by the

former reaction. As a result of over 2,000 tests by one or other method it was shown that an average of 12·4 weeks' treatment caused a drop of 21–30 per cent. in the number of positive serums, followed by a definite rise in the percentage two months later. The clinical results were no better. After an average attendance of four weeks 212 out of 321 patients retained active signs of the disease; 38 per cent. showed active signs after eight weeks' rest from treatment. "It may be reasonably inferred that between 60 and 70 per cent. remain infective after completing a course." It is necessary therefore to push the arsenical, and it is suggested that 2 gm. arsphenamine should be given over a course of 12 weeks, at a cost of about 18*s*. per head.

Keane points out that these observations refer only to a section of the work, and that the results in conditions other than primary and secondary syphilis seem quite satisfactory. He thinks the percentage of defaulters will compare favourably with those in European clinics. He comments on the high prevalence, 30 per cent., of stricture of the urethra in males, the result of gonorrhoea.

Arsphenamine was given in small dose because both the supply and money to purchase it were scarce, and authority for its issue without payment had not been obtained. Brilliant results were obtained in the treatment of congenital syphilis with sulfarsenol in young and especially new-born infants. As to the prevalence of venereal disease he assesses recently acquired and acute contagious cases at 10–20 per cent. of the population.

In his conclusions he envisages the probability of an attendance of 200 in-patients and 100,000 out-patients annually; the success of the work militates against its maintenance. Natives who have money are willing to pay for treatment. Development of the work should proceed along the lines of combination with general native medical work rather than by separation, for both financial and other reasons.

The report contains much that is of value and interest to medical officers responsible for an anti-venereal campaign in a primitive country.

A. G. B.

THIROUX (A.). **Les maladies vénériennes dans les colonies françaises.** — 30 pp. With 2 figs. & 1 chart. [36 refs.] 1922. Marseille: Commissariat Général de l'Exposition Coloniale, 5, rue Noailles.

The larger part of this article—a report presented at a Public Health Congress at Marseilles—concerns syphilis, and the author notes that in the tropics, as in Europe, it is impossible to get exact statistics. A comparison between native troops and troops in Europe shows that the disease is much more frequent in the French Colonies than in France or North Africa. It has been suggested that the blacks are relatively immune to syphilis. If so, the author would attribute their immunity to the fact that the adult is almost refractory to malaria, though in Madagascar and Indo-China Thiroux has described grave symptoms from the association of malaria and ankylostomiasis with syphilis [see this *Bulletin*, Vol. 17, p. 238], and FOURNIER has drawn attention to the severity of syphilis in malarial subjects. The author expresses the opinion that syphilis without symptoms, revealed only by the serum test, constitutes the majority of the infections. He goes on to consider syphilis in each colony.

As regards Indo-China, infection is heavier in Cochin-China and Annam than in Cambodia, Tonkin, or Laos. In 1903 one-third of the Annam population were suffering from syphilis (KERMORGANT), and the author says that the proportion is now still larger, and that he himself has seen cases of general paralysis and transverse myelitis. By encouragement of prostitutes to come for treatment, Thiroux claims to have, in three years, considerably reduced the number of recent infections. In Cochin-China, of 14,095 patients, 1,521, or 10 per cent., were recognized as syphilitic and the Wassermann test was not employed ; and maternity hospital figures show that in 1921 in 1,196 confinements there were 95 miscarriages, 90 syphilitic macerated foetuses, and 60 infants with signs of the congenital disease.

In the Antilles syphilis is more to be dreaded than malaria or yellow fever (NOC and others).

At Djibouti little venereal disease is seen among the natives, but the author thinks it common because in 1921 among 500 Europeans, 18 contracted syphilis, 13 soft chancres and 25 gonorrhœa.

In Senegal, of natives treated in the hospital 90 per cent. have old urethritis and almost all are syphilitic. The still-births, which numbered 17 per cent. in 1890–1908, have come down to 12·8 per cent. since the maternity hospital was opened at Dakar ; 42 per cent. of children die before they reach the age of four. The author notes also that the infants of West Africa are strongly affected by malaria, much more than those of Indo-China ; hence the rapid depopulation in Senegal, where more than half the children born since 1890 have disappeared, while Indo-China continues to flourish.

On the Ivory Coast it is estimated that 50 per cent. of the women in the centres are syphilitic. Still-births number 36–55 per cent. (LOUYS). Many children show signs of congenital syphilis.

In Cameroon syphilis is graver than elsewhere in French Africa, but so is malaria among adults. Thiroux notes that ankylostomiasis, too, is common, occurring in 80 per cent. of adults and 63 per cent. of children between two and three. The infantile mortality lies between 42 and 63 per cent., and syphilis is stated to be the chief cause (JULLEMIER).

In the Middle Congo syphilis equals trypanosomiasis as a cause of sterility. A large number of tertiary manifestations are seen, though in the case of the lower limbs their syphilitic origin is often masked by phagedena, due to the fuso-bacillary association.

In the Shari-Chad region JAUREGUIBERRY suggests that there are two clinical varieties of syphilis: one indigenous, the other imported.

Madagascar is the colony which is most gravely visited by venereal diseases, and the one in which information is most exact. Between 1909 and 1920, 39 per cent. of the total population was treated for syphilis. Three cases of tabes were noted, and 182 internments for general paralysis. In 1911 the percentage of syphilitic babies was 28, in 1920, 43·5. As early as 1902 syphilitic pregnant women were treated, with excellent effect on the offspring. It is noted that in Madagascar malaria is severe both in children and adults.

Commenting on the antivenereal dispensaries which exist (or are in process of organization) in Indo-China, Martinique, Senegal and Madagascar, Thiroux questions whether the natives will persist with treatment after the disappearance of symptoms ; but the spread of disease will be checked. He notes the large number of women without symptoms, but with Wassermann positive, and quotes figures from Paris showing that 62 per cent. of pregnant women were unaware that

they were infected, and pointing to the great importance of treatment early in the pregnancy, and surveillance of all pregnant women as far as is possible.

The information about gonorrhoea is even less definite. The disease is widespread; in West Africa and Madagascar it is considered obligatory, and the doctor is only consulted for acute and painful symptoms. In West Africa it is believed that gonorrhoea gives the male a special aptitude for procreation. Little is known as to its precise effect on sterility in women.

In his final remarks the author suggests that the infantile mortality among the offspring of syphilitic subjects is largely aggravated by malaria in those countries where the malarial index in children is high, points to the value of treatment by "quinio-bismuth," to the need for asylums for the insane which have been instituted in Indo-China, Madagascar and West Africa, and to the necessity that all European doctors in the tropics be capable of doing a simple Wassermann reaction, for which Hecht's modification is suggested as demanding a minimum of material and manipulation.

[This paper has been summarized at some length owing to the importance of the subject. The data are, however, lacking in precision, and the figures on which some of the most alarming statements are based are not given. It is probable, though it is seldom so stated, that the statistics given for a whole colony really refer to one or more European stations and their immediate vicinity.]

A. G. B.

Levy (Moise D.). **The Effect of Arsphenamine Treatment on Cardiovascular Syphilis in Negroes.**—*Texas State Jl. Med.* 1923. Vol. 18. Feb. No. 10. pp. 509–512. [15 refs.]

In Texas among the negro population syphilis is rife, and, probably as a result of strenuous dock labour, the cardiovascular system is particularly affected by the disease. The author reviews the therapeutic and experimental history of arsphenamine, and then tabulates the results of treatment of a series of 19 negro syphilitic cardiovascular cases—6 aneurism, 7 aortitis and myocarditis, and 6 aortic insufficiency —with neosalvarsan. Of this series, 6 individuals died, 5 showed no improvement, 1 became worse, and 7 had slight alleviation of symptoms. The author therefore concludes "that arsphenamine is not without considerable danger in luetic cardiovascular infections in negroes, its results so far as cure is concerned being almost nil."

A. A.

i. Van der Zijl (A.). **Over Salvarsandermatitis en Salvarsanicterus.** [On Salvarsan Dermatitis and Salvarsan Icterus.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 5. pp. 589–613. With 1 plate.

ii. Hazebroek (F. E. A.). **De intoxikaties van de gekombineerde kwiksalvarsanbehandeling.** [The Intoxications from Combined Mercury-Salvarsan Treatment.]—*Ibid.* pp. 614–628.

iii. Hermans (E. H.). **Nieuwere inzichten der Luestherapie.** [Recent Views on the Treatment of Syphilis.]—*Ibid.* pp. 629–654.

i. A description is given of the different rashes noted after salvarsan treatment. The early dermatitis is less serious than that appearing later. Sometimes, especially in the latter, there exists jaundice too.

The dermatitis was rarely seen by van der Zijl in Europeans (1 : 1552) in comparison with its frequent occurrence in Malays and Eurasians (31 : 1292). The reason of this difference the author, after excluding other possible factors (unusual toxicity of the drug used, overdosage, influence of nutrition), assumes to be insufficiency of the liver, often probably the latent stage of cirrhosis, a common disease in the Malay race.

ii. Hazebrook also noted the susceptibility of the Malay to salvarsan intoxication. He quotes in detail two cases of salvarsan jaundice.

iii. Pessimistic views of the toxicity of salvarsan, to which drug the author ascribes six deaths he knows of in 1921 in Java. Hermans thinks that salvarsan interferes too much with the natural healing tendency of syphilis, thereby causing more cerebrospinal localization of the disease (Gennerich). He emphasizes the necessity of examination of the cerebrospinal fluid, and recommends intraspinal treatment in syphilis of the nervous system, quoting cases successfully dealt with in this way. The technique is given in detail. The same remark as in the two preceding papers is made about the susceptibility of the natives to salvarsan intoxication.

W. J. Bais.

Nogue (M.). **Un cas d'insuffisance hépatique avec ictère à la suite d'une série d'injections de novarsénobenzol.**—*Bull. Soc. Path. Exot.* 1923. Feb. 14. Vol. 16. No. 2. pp. 146–149.

The patient, a West African, who, besides being syphilitic, was addicted to alcohol, received in two months six injections of 914, beginning with 0·15 gm. and increased by 0·15 gm. in regular succession up to 0·90 gm. Subsequently he grew extremely thin and weak and somewhat jaundiced, and suffered from vomiting, diarrhoea and a painful heaviness about the region of the liver, and his urine then was found to be greatly deficient in urea and to contain albumin, excess of insufficiently oxidized nitrogenous products, of scatol, and of biliary pigments, and crystals of leucine and tyrosine. He was put on milk and vegetarian diet, and treated with intravenous injections of cyanide of mercury and small doses of sodium sulphate ; and although his jaundice almost disappeared, he became otherwise worse. Meanwhile, although he had never been fevered, crescents were found in his blood, and he was then put on antimalarial treatment, with the result that he very soon became better and his urine approximately normal.

A. A.

Ingram (A.) & Macfie (J. W. S.). **Two Further Cases of Cardiac Aneurysm.**—*Ann. Trop. Med. & Parasit.* 1922. July 20. Vol. 16. No. 2. pp. 119–126. With 1 plate & 2 text figs. [2 refs.]

These cases occurring at Accra, this time in European men of 32 and 36 [see this *Bulletin*, Vol. 17, p. 422], concerned the left auricle and the anterior cusp of the mitral valve. One died on the beach while waiting for the steamer, the other from heart failure in the course of an illness. Neither had been on the West Coast more than about a year, and both had been medically passed as fit for service there.

A. G. B.

Lhuerre (H.) & Hudelet (G.). **Un cas d'anévrisme de l'aorte abdominale.**—*Bull. Soc. Path. Exot.* 1923. Feb. 14. Vol. 16. No. 2. pp. 149–151.

The patient's account—a West African of 60 years and of much and varied personal experience of venereal disease in his time—was that his troubles

began only two months before admission with severe pain in epigastrium and umbilicus and a particular tender spot near the lower angle of the left scapula, and that eight days afterwards a swelling about the size of a hen's egg appeared below the tenth rib. When admitted the left lumbar region and flank adjoining were enormously swollen, and the skin stretched, shiny, oedematous, and hot; the lumbar backbone was displaced to the right, and the spinous processes were extremely painful. Powerful pulsations were felt on deep pressure. The patient died seven days after admission. At autopsy practically the whole left side of the abdomen was occupied by an enormous tumour, the front wall of which was formed by the sheath of the left psoas muscle. The cavity of the tumour contained a vast clot weighing 1,225 gm. Into the cavity the abdominal aorta opened from the left pillar of the diaphragm to the origin of the left renal artery. Five intervertebral disks were completely destroyed, and the bodies of the last two dorsal and first three lumbar vertebrae were hardly 5 mm. thick.

A. A.

FORNARA. **Lésions cardiaques et aortiques chez des nègres.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 257–260.

Three autopsies on negroes at Boma are related :—

1. A case of lobar pneumonia, with vegetative endocarditis of the aortic valves and syphilitic aortitis.
2. Parietal aneurism of the heart. The section which passes through the left arterial orifice opens up the aneurysmal sac, filled with recent non-stratified fibrinous clot. The communications between aneurysm and ventricle are numerous (at least two), but small. Here the endocardium is dull and whitish. No cicatrix or area of softening seen.
3. Aneurysms of the aortic valves. The aortic sigmoid valves appear normal, but the bases of two of them lead to the aneurysmal sacs filled with fibrinous stratified clot. Death in this instance was due to acute miliary tuberculosis.

A. G. B.

SINDERSON (H. C.). **Variola in Baghdad. Notes regarding the 168 Civilian Cases of Variola admitted to the Civil Isolation Hospital, Baghdad, during the Autumn Epidemic of 1921.**—*Edinburgh Med. Jl.* 1922. July. New Ser. Vol. 29. No. 1. pp. 18–24.

This epidemic began in August, and after 21 weeks' duration came to an abrupt end in December with a fall of atmospheric temperature. In the 17th week there were 30 fresh cases.

Under 10 years of age, 50 males and 89 females were affected.
Over 10 ,, ,, ,, 28 ,, ,, 1 ,, ,, ,,

The sex anomalies are explained by the fact that there was much concealment of cases, which chiefly affected the more highly prized boys, and that adult women were both protected and concealed by the purdah régime. No cases were admitted between the ages of 10 and 18, and it is suggested that at this period the natives have some natural immunity. The mortality percentage over all cases was 25, and varied between 28 for children under 10 and 17 for persons above that age. The age period 1–3 gave the highest death-rate. In only 14 of the 139 cases under 10 was there evidence of successful vaccination. An account is given of the clinical types and of the complications.

A. G. B.

Bleyer (Jorge Clarke). **Ueber Auftreten von Variola unter Affen der genera Mycetes und Cebus bei Vordringen einer Pockenepidemie im Urwaldgebiete an den Nebenflüssen des Alto Uruguay in Südbrasilien.** [The Occurrence of Smallpox among Monkeys of the Genera Mycetes and Cebus, resulting from an Epidemic in the Primeval Forest on the Tributaries of the Upper Uruguay River, Brazil.]—*Muench. Med. Woch.* 1922. July 7. Vol. 69. No. 27. pp. 1009–1010. [3 refs.]

The author states that mild smallpox among the natives of the region of the Upper Uruguay River, in Brazil, spread to monkeys of the genera named, whom it killed in large numbers. "Corpses of these species were found under trees. Sick monkeys, as well as the dead, were covered with variola pustules. Cebus monkeys stricken with the disease were seen wringing their hands (*händeringend*)." No more is said of this unusual occurrence, but the author goes on to speculate on the ease of transmission of the disease in a country where the dead are rapidly devoured by beasts and birds of prey, biting insects abound, and even the butterflies are gross feeders.

A. G. B.

i. Balfour (Andrew). ii. Fraser (A. Mearns). [Correspondence.] **Permanganate of Potash in Smallpox.**—*Lancet.* 1922. Dec. 2. p. 1193. [11 refs.]; Dec. 16. p. 1303.

i. The author quotes from a paper which he wrote in 1921 [see this *Bulletin*, Vol. 17, p. 248], and adds the gist of three reports from the tropics in favour of permanganate treatment, from C. J. Baker, of Uganda, from Selwyn-Clarke's monograph [*l.c.*, Vol. 19, p. 355] and from J. S. de Sousa, of Zanzibar. Selwyn-Clarke says that the beneficial effects were so apparent when the half-saturated solution was applied 2–3 times daily prior to the rupture of the pustules that the method became very popular amongst patients and attendants. De Sousa favours the use of a 5 per cent. solution in definitely discrete cases. In confluent cases the patients were placed in a long bath filled with 5 per cent. permanganate at body temperature for 10–15 minutes twice daily. Smell and sloughing were greatly reduced.

A list of 11 references is appended.

ii. The writer states that a similar treatment was adopted by him at Portsmouth in 1902. The patient was immersed in a solution of izal, and was then completely bandaged from head to foot in several layers of sal alembroth bandages. Though some cases were confluent, all recovered and the skin remained clean. It is suggested that smallpox itself comes to an end after the appearance of the papules, and the illness which starts about the eighth day is a sapraemia caused by the infection of the papules from organisms outside. The antiseptic treatment prevents pustulation.

A. G. B.

Parmanand (M. J.). **Notes on a Case of Bronchomoniliasis.**—*Indian Med. Gaz.* 1922. Nov. Vol. 57. No. 11. pp. 418–419. With 2 figs.

The patient was a Hindu, aged 38, with history of cough, spitting of blood and irregular fever of some nine months' duration. The physique was good. Physical examination revealed small scattered patches of consolidation in both lungs and râles. The sputum, when stained, showed

masses of gram-positive fungus filaments but no tubercle bacilli. There was no thrush in the mouth or fauces. The organism was grown on Sabouraud's medium ; the growth consisted, microscopically, of globular yeast-like cells with a few short mycelial filaments. The sugar reactions were those of *Monilia pinoyi*, Cast.

A. G. B.

FARAH (Najib). **Observations on Castellani's Bronchomoniliasis, with Report of a Case with Pneumonic Onset and a Peculiar Clinical Course.**—*Jl. Trop. Med. & Hyg.* 1923. Jan. 1. Vol. 26. No. 1. pp. 1–5.

The patient, a refugee from Jaffa, aged 55, was taken ill with bronchial catarrh and haemoptysis in August and died after 2 years and 7 months. Four months after the onset he had an attack of lobar pneumonia of the left base followed by chronic bronchitis and more haemoptysis. Cough and expectoration continued. Irregular fever was the rule. No tubercle bacilli could be found. A diagnosis of chronic fibroid phthisis was made, till May 1918, when the author saw the patient and inclined to the diagnosis of pulmonary mycosis. There were then signs of contraction of the left lung. Repeated examination of the sputa always revealed *Monilia pinoyi*. Intravenous inoculation of a rabbit with a 24-hour culture resulted in its death with generalized moniliasis. Inoculation of guinea-pigs with fresh sputa was negative. The fungus gave positive agglutination and complement deviation tests with the patient's serum (no details given). The left chest became more retracted, the left arm paralysed, and the patient died in angina. There was no autopsy.

The author recommends the use of injectable iodine in the form of lipiodol containing 40 per cent. iodine in poppy oil. Mild cases recover and the more severe are greatly benefited.

A. G. B.

i. CASTELLANI (Aldo), DOUGLAS (Mackenzie) & THOMSON (T.). **Acute and Subacute Tonsillomycoses.**—*Proc. Roy. Soc. Med.* (Sect. of Trop. Dis. & Parasit.) 1922. Aug. Vol. 15. No. 10. pp. 39–44.

ii. ——, —— & ——. **Further Observations on Tonsillomycoses.**—*Jl. Trop. Med. & Hyg.* 1923. Jan. 15. Vol. 26. No. 2. pp. 19–24. With 10 text figs. [4 refs.]

i. Acute and subacute affections of the tonsils, of mycotic origin, are frequently met with in the tropics, and are not at all rare in Europe. The fungi responsible are Monilia usually, but occasionally Oidium and Hemispora. Acute cases may simulate diphtheria and are sometimes treated as such.

ii. There are here described, with illustrative cases, various fungous affections of the throat and, with a plate of illustrations, some of the fungi responsible for them. The numerous varieties of acute and subacute tonsillitis due to Monilia, Oidium, Saccharomyces, etc., do not seem to be very serious, but are alarming by being often mistaken for diphtheria. Granular mycosis of the crypts, due to a miscellany of organisms, though not physically painful or alarming, often makes the breath distressingly foul, and thus may be the cause of great mental suffering, as when, in the case recorded here, it leads a husband to look coldly on his wife.

A. A.

HAMILTON-BROWNE (E.). **Case of Actinomycosis of the Breast.**—*Jl. Assoc. Med. Women in India.* 1923. Feb. Vol. 11. No. 1. pp. 18–19.

Case of 15 years' duration, which in its early stage had been surgically attacked as a conjectured cancer, but had been getting worse ever since the operation. The whole right breast was hard and immovably adherent, exuding thin pus from numerous fistulae. The breast and the pectoral muscles were removed right down to the ribs. Typical fungi were isolated from the pus and were found in sections of the tissues removed.

A. A.

i. FONTOYNONT (M.) & SALVAT (P.). **Sur une Actinomycose du rat à Madagascar.**—*Bull. Soc. Path. Exot.* 1922. July 12. Vol. 15. No. 7. pp. 596–607. With 1 text fig.

ii. LANGERON (Maurice). *Actinomyces Salvati*, **n. sp., nouveau Micro-siphoné malgache.**—*Ibid.* pp. 526–528. [5 refs.]

i. The rat was the subject of ulceration or abscess of the tail, testicles, peritoneum and mesentery, pleura, pericardium and eye. The parasite is described with figures ; it proved to be a new species of Actinomyces. The cultures and the results of inoculations into other animals are described.

ii. The author says that he has adopted the generic name, *Actinomyces*, owing to the decision reached in 1920 by the Committee of American Bacteriologists based on the work of BREED and CONN, who showed that the terms *Actinomyce* Meyen 1828, and *Actinomyces* Harz., 1877, are not synonymous [see this *Bulletin*, Vol. 16, p. 197]. *Actinomyces salvati* comes in the section *parasitica* of CHALMERS and CHRISTOPHERSON, subsection *majora*.

A. G. B.

i. BLANCHARD (M.) & LEFROU (G.). **Présence dans une lésion humaine d'un saccharomycète pathogène pour le cobaye.**—*Bull. Soc. Path. Exot.* 1922. Dec. 13. Vol. 15. No. 10. pp. 915–918. [3 refs.]

ii. MARCHOUX (E.). **Mycose pulmonaire.**—*Ibid.* pp. 919–920.

i. The author found in the pus from a deep abscess over the scapula in a European at Brazzaville a saccharomycete which, inoculated into a guinea-pig, invaded the lymphatic system, causing progressive cachexia and death six months later. No tubercle bacilli could be discovered in the animal, but the yeast was found in various groups of lymphatic glands ; the viscera were quite healthy. The organisms found in the serosanguinolent pus, drawn by puncture from the abscess on six occasions, are described ; there was no mycelium. Attempts at culture failed. Treatment of the patient by potassium iodide was ineffective. The authors admit the uncertainty that this yeast is pathogenic for man.

ii. On February 5 an official from French West Africa consulted the author, complaining of loss of strength and of the passage of red-currant-jelly sputa for two months, suggesting amoebic abscess. Auscultation discovered a cavity in the right chest, which was compatible with the hypothesis of hepatic abscess opened into the lung. No amoebae were found in the sputa, but abundance of yeast cells, many budding. Attempts at culture failed. The patient was lost to view and died in April. A guinea-pig, inoculated on February 5, died on the 13th, showing a lardaceous plaque at the site and a large gland,

in both of which the yeast was found. Inoculation was made into a second guinea-pig, which developed a tumour, also containing the yeast cells. These resemble those found by BLANCHARD and LEFROU. The author suggests that the cells are those of a Monilia. In any case, he says, these two reports show that in West Africa one must expect to find at least one form of mycosis resistant to iodide treatment, and probably a moniliasis.

A. G. B.

i. FONTOYNONT (M.) & CAROUGEAU. **Abcés sous-dermique et gommes ulcérées produits par le** *Sporotrichum Carougeaui* **Langeron 1913, associé à la tuberculose chez un enfant malgache.**—*Bull. Soc. Path. Exot.* 1922. June 14. Vol. 15. No. 6. pp. 444–453. [3 refs.]

ii. LANGERON (Maurice). **Un nouveau Sporotrichum malgache :** *Sporotrichum Carougeaui* **Langeron, 1913, et remarques sur les Sporotrichés.**—*Ibid.* pp. 453–459. With 2 text figs. [3 refs.]

i. The authors note that parasites living in nature in the state of saprophytes find a favourable terrain in organs depressed by malaria, tuberculosis and syphilis, and especially in the tropics in the usual conditions of heat and humidity. They think that all the tropical saprophytic fungi may at any moment become pathogenic. The lesions described in his paper were seen in a child of six in Madagascar and were caused by a Sporotrichum. At the time of writing (1911, publication having been delayed till 1922) this was the third case of human sporotrichosis. There were abscesses and ulcerated gummas in the neck and axillae, and a history of two years. The lesions, of which a detailed description is given, consisted of cicatrices, crusted ulcerations and swollen glands. In France the diagnosis would have been tuberculosis, but this disease is rare on the Madagascan plateaux. Inoculations were made on maltose agar and to guinea-pigs. On the media a fungus grew in pure culture ; the animals died of tuberculosis. The authors satisfied themselves of the pathogenicity of the fungus by an agglutination test with the patient's blood.

The cultures on various media are described and the morphology of the fungus. All its characters place it in the Sporotrichum group. It resembles *S. beurmanni*, but is clearly differentiated by the constant absence of pigmentation and the persistance of the white tint. The patient was treated with pot. iod. for over a year and at last recovered.

ii. Langeron discusses the Sporotrichum group, reaching the conclusion that the pathogenic species thus designated should be assigned to the genus *Rhinocladium*, SACCARDO and MARCHAL, 1885. The fungus here described is the first pathogenic Sporotrichum. It is distinguished by its white colour, which persists in the oldest culture. Incidentally the author remarks that the importance of the macroscopic aspect of fungus cultures has been much exaggerated ; the employment of this criterion to the exclusion of morphology has led to many errors, *e.g.* in the genus *Monilia*.

The new Sporotrichum is figured in its mycelial and yeast forms.

A. G. B.

FORGUES (M.). **Les ictères infectieux chez les noirs.**—*Bull. Soc. Path. Exot.* 1922. May 10. Vol. 15. No. 5. pp. 348–350.

Stationed at a military hospital in Tunis, the author has observed since August, 1920, that any sudden changes in temperature are accompanied by a number of admissions to hospital of cases of fever, usually

of a mild type, accompanied by jaundice. In most cases the temperature falls in a few days and no recurrence takes place, but twice a definite relapse has been noted. No organism has been discovered which will account for the disease. It is suggested that the sudden changes in the climate may be responsible for an otherwise innocuous organism like *Bacterium coli communis* taking on pathogenic properties and affecting the liver.

C. M. Wenyon.

DE CASTRO (A. Bayley). **Toxic Jaundice of Unknown Origin in the Andamans.**—*Indian Med. Gaz.* 1922. Aug. Vol. 57. No. 8. pp. 292–295. With 3 charts.

The author has had five cases of toxic jaundice under his care in two months, and refers to a previous case [see this *Bulletin*, Vol. 17, p. 418]. Notes of three—one fatal—are here given. The salient features are : slight initial fever, increased pulse-rate, very acute pain in the thighs, intense jaundice, hiccough, haemorrhages (from bowel, stomach and nose in the fatal case), early albuminuria, and eosinophilia. No malarial parasites were found and " no *Spirochaeta ictero-haemorrhagica* in any of the several smears of blood examined."

[A fatal form of jaundice in the Andamans was described by WOOLLEY in 1913 (see this *Bulletin*, Vol. 2, p. 323).]

A. G. B.

WHITEHEAD (W. T.). **Report on an Epidemic of Jaundice at Port Sudan.**—*Jl. Roy. Army Med. Corps.* 1922. Oct. Vol. 39. No. 4. pp. 294–298.

Forty-seven mild cases of obstructive jaundice occurred in young adult natives in January–March, 1922 ; for the preceding 16 years there was no record of jaundice in Port Sudan. Rats and flies abounded ; there were no mosquitoes. Eight of the cases are tabulated. The symptoms were epigastric pain, leucopenia (3,000 leucocytes per cmm.), jaundice, clay-coloured stools, slight fever ; no albuminuria. The average stay in hospital was four days. Guinea-pigs inoculated with the urine remained healthy. The serum did not agglutinate any of the enterica group, and no organism could be cultivated from the blood.

A. G. B.

DE MELLO (Froilano), DE SOUSA (Jacinto) & GUIMARAES (Affonso). **Some Researches on Rickettsias and the Aetiology of Typhus Fever.**—*Jl. Trop. Med. & Hyg.* 1923. Jan. 15. Vol. 26. No. 2. pp. 24–27.

In the blood of 18 typhus fever patients and also of some typhus convalescents in Oporto the authors have found Rickettsia, which they identify with *R. prowazeki*. In the intestine of lice (*P. corporis*) from typhus patients and from beggars, and lice (*P. corporis* and *Ph. pubis*) from inhabitants of a town free from any record of typhus, Rickettsia were to be found, though the authors could not decide whether they were *R. prowazeki*, *R. pubis*, or some other species.

A. A.

Segal (M.). **Recherche sur la pathogénie du typhus exanthématique.** —*Rev. Méd. et Hyg. Trop.* 1923. Jan.–Feb. Vol. 15. No. 1. pp. 27–29.

In the course of culture experiments with the blood and brain of guinea-pigs infected with typhus the author has isolated a fungus which, when inoculated into the guinea-pig, produces a febrile malady at all points similar to typhus, and showing analogous lesions and perivascular infiltrations. The fungus, which has been recovered from cultures of the blood and organs of animals experimentally infected with it, is called by the author *Pacillomyces varioti*.

Other fungi may cause fever when inoculated into the guinea-pig, but in such cases the fever has an incubation period of but two days and vascular lesions do not occur.

A. A.

Barykin (W.) & Kritsch (N.). **Microbion typhi exanthematici. (Der Fleckfiebererreger.)**—*Arch. f. Schiffs- u. Trop.-Hyg.* 1923. March. Vol. 27. No. 2. pp. 49–64. With 1 plate and 2 text figs. [21 refs.]

The authors seem to be imperfectly acquainted with recent English and American work on the secrets of typhus fever. The pith of their prolix paper is a somewhat indistinct account of the process of cultivating "Mikrobion typhi exanthematici"—an organism which they regard as almost certainly the cause of typhus fever, differing from all other microbes found in association with the disease, "with the possible exception of *Rickettsia prowazeki*." Indeed, except that it is amenable to cultivation, it agrees in all particulars with that Rickettsia.

The "mikrobion" can be cultivated from tissues of typhus patients post-mortem or of experimentally infected guinea-pigs in the fever stage; in the former case there is at first a good deal of concurrent bacterial growth, which, however, does not eventually obstruct the "mikrobion"; in the latter case an almost pure culture results. The process of culture is as follows: Brain, spinal cord, or spleen "sterilized of cadaveric matter" immediately after death is mashed into a broth with tissue of corresponding healthy organs—which tissue has been digested with pancreatin and sterilized for 1½ hours at 100° (presumably C.); the amount of healthy tissue liquor should be from half to one-third of the whole mixture. [We can but assume that the source of the corresponding healthy organs is always the guinea-pig.] Or instead of this digested and sterilized liquor, ascites fluid, or Locke's or Ringer's solution, or a local mineral water which is "a mixture of sundry physiological salt solutions," may be used.

The mixture is cultivated under anaerobic conditions at 35° to 37° C. and growth begins in 10–20 days.

The culture is infective to guinea-pigs, and the effects and the pathological lesions are similar to those seen in guinea-pigs experimentally infected with typhus in the usual way.

A. A.

Cros (L.) & Frécus (F.). **Le typhus dans la division d'Oran. Etude de la morbidité et de la mortalité de 1917 à 1921.**—*Arch. Méd. et Pharm. Milit.* 1922. July. Vol. 77. No. 1. pp. 43–46.

The contents of this paper are summed up in five graphs, which show, *inter alia*, that the morbidity from typhus in the military hospitals

in the Oran Division of Algeria has risen from 18 cases in 1917 to 395 in 1921, with a simultaneous increase in the mortality-rate ; that the main incidence of the disease is from February to July, the top of the curve being in April and the bottom in October ; that in Oran Military Hospital alone the mortality has fallen from 36 per cent. (22 cases) in 1919 to 3 per cent. (26 cases) in 1921, which may be attributable to the treatment practised ; that the morbidity curve in the civil hospitals during the same period resembles the military in having its acme in April.

The authors note that typhus is present all the year round, that far from being a winter disease it is favoured by warmth, and its appearance or reappearance must be expected in the first days of spring ; moreover, that the mortality exceeds 20 per cent., and is usually smaller in natives than in Europeans.

The Oran Military Hospital treatment consisted in feeding the patients freely as early as possible, and giving them up to 3 litres of hot coffee daily, with injections of eucalyptol, creosote and guaiacol in oil, and in administration of digitalin and strychnine as cardiac tonics.

A. G. B.

Quiroga (Ruperto). **Campaña contra el tifus exantematico.** [An Anti-typhus Campaign.]—*An. del Depart. Nac. Hig.* Buenos Aires. 1922. Mar. & Apr. Vol. 28. No. 2. pp. 83–121. With 24 text figs., 2 sketch maps & 10 charts.

An account of an outbreak of typhus fever at Mulquín in the Department of Pomán, Province of Catamarca. The origin of the epidemic could not be traced. There were 40 cases in all. Twenty-six were treated in their homes and of these six died ; the remaining 14 were treated in a temporary hospital and all of them recovered. The Weil-Felix reaction was positive up to 1 in 500 in 49 out of 54 cases examined. [No attempt is made to account for the non-agreement of the two statements as regards the number of cases.]

The means employed for dealing with the outbreak were : (1) The establishment of a military cordon ; (2) notification of all suspects ; (3) isolation of all cases ; (4) disinfection of huts ; (5) disinfection of persons and clothes ; (6) provision of fresh clothes and of food for the poor ; (7) instruction by pamphlets, etc.

H. Harold Scott.

Brunet. **Trois moyens simples de préservation contre le typhus.**—*Bull. Soc. Path. Exot.* 1923. Feb. 14. Vol. 16. No. 2. pp. 101–105.

The three simple means of protection against typhus, or, rather, against the ruthless louse, are the constant daily use of a soap containing 2 per cent. of oxycyanide of mercury, or of a soap consisting of 25 per cent. petroleum, or of a lotion composed of 100 gm., each of 1 in 10 turpentined oil, 1 in 10 camphorated oil and ordinary vinegar and 200 gm. of petroleum.

A. A.

Sikora (H.). **Beitrag zur Kenntnis der** *Rickettsia prowazeki.*—*Cent. f. Bakt.* 1. Abt. Orig. 1923. Jan. 30. Vol. 89. No. 7–8. pp. 271–272.

The conclusions of this contribution are that in contradistinction from all other species of Rickettsia, *R. prowazeki* lives and multiplies in the cells of the coelom ; and that it remains alive in air-dried louse-excrement for 3–24 hours.

A. A.

i. DE MELLO (Froilano) & GUIMARAIS (Afonso). **Constatation dans le sang des exanthématiques de nombreux micro-organismes ressemblant à des** *Rickettsia prowazeki*.—*C.R. Soc. Biol.* 1922. July 22. Vol. 87. No. 27. pp. 707–709.

ii. DE SOUSA (Jacinto). **Présence de** *Rickettsia prowazeki* **dans le sang des convalescents de typhus exanthématique.**—*Ibid.* pp. 710–711.

iii. GUIMARAIS (Afonso). **Flore microbienne du** *Phthirius inguinalis*; **remarque sur des éléments de nature rickettsienne.**—*Ibid.* pp. 711–713.

i. Description of the polymorphic irregularities of an organism identified as *Rickettsia prowazeki* found copiously in the blood of some typhus fever patients.

ii. In the blood of six typhus convalescents (75 per cent. of the number of patients examined) *Rickettsia prowazeki* was found during the two days (two cases), or three days (three cases), or seven days (one case), following subsidence of fever.

iii. In the intestinal flora of crab-lice (*Phthirius inguinalis*) from a part of Northern Portugal free from typhus, the author found typical Rickettsia.

A. A.

DE CASTRO (A. Bayley). **Epidemic of Cases of Oedema amongst West African Porters.**—*Indian Med. Gaz.* 1918. Oct. Vol. 53. pp. 369–372. [Received June, 1923.]

This epidemic occurred among West African carriers in the East African campaign at a camp near the river Rovuma, which divides Portuguese East from what was German East Africa. It followed a march of 400 miles and of many hardships, including "irregular hours for meals, which at times were not properly cooked." The symptoms were: oedema of face and legs, ascites (in some cases), anaemia, slow pulse, hyperidrosis, anaesthetic and hyperaesthetic patches on legs, enlarged or tender liver, but without jaundice; the reflexes were in half exaggerated, in half normal. Rapid improvement followed treatment in the hospital "banda" by rest in bed and "Ideal" milk, and the patients were discharged to duty in a week or less. Some had thymol, iron and arsenic, which accelerated the cure. Details of three cases thus treated are given. Out-patients improved but slowly. Ankylostomes were sought and found in a few cases only, but in nearly all the stools larvae of *Calliphora vomitoria* were seen and large quantities of particles of undigested chillies, the ration of which, it is noted, was needlessly large. The general ration consisted of beans, rice, meat, tea, sugar, salt and chillies [quantities not stated]. The meat issued was sometimes "bully"; biscuits might be substituted for rice, fermentation in which often led to its condemnation; the beans were not always good. The porters affected were of a "low type." No cases occurred among the fighting troops [? West Africans]. On shifting camp the epidemic ceased. The number affected is not stated, nor do we know how long the West Africans had left their own country or the diet to which they were accustomed. [Other epidemic occurrences of oedema are noted in this *Bulletin*, Vol. 17, p. 422; Vol. 18, p. 300.]

A. G. B.

SALM (A. J.). **Edema-Disease as Occurring in the Province of Kediri [Java].**—*Meded. Burgerlijk. Geneesk. Dienst in Nederl.-Indië*, 1922. Pt. 4. pp. 294–303. With 1 plate.

The oedema here described appears to be a sort of famine dropsy, since it is manifested in ill-nourished individuals, and, in this particular

outbreak, was first reported, and was most rife, in a district where there was scarcity of food. Persons of all ages are affected, the oedema may spread over the whole body, liver and spleen are not enlarged, there are no cardiac anomalies, the urine only occasionally contains traces of albumin, and paralysis never occurs ; the disease is very frequently fatal, and death is not preceded by any obvious disturbances, except, sometimes, diarrhoea—the sick person quietly snuffs out. From the clinical symptoms, as well as from observations and purposive experimental treatment, nephritis, ankylostomiasis, beriberi, malaria, dysentery, etc., are excluded from the aetiology of this "oedema-disease."

A. A.

Acton (Hugh W.). **The Causation of Epidemic Dropsy.**— *Indian Med. Gaz.* 1922. Sept. Vol. 57. No. 9. pp. 331–333.

A "preliminary" paper in which the author attributes epidemic dropsy to the use of "seasoned rice." He uses the data collected in 1911 by Colonel E. D. Greig in Bengal, who showed that the disease affects the Bengali Hindu community with fixed incomes, who live mainly on rice, and not the Europeans or the Marwaris, who eat bread and pulses as well, and that the incidence is particularly high among Bengali widows, to whom caste restrictions forbid meat ; but he parts company from Greig in his opinion that the disease is due to a one-sided diet. The poorer classes, who escape, eat the new indigenous, and cheaper, rice ; the middle classes, who suffer, eat the old well-seasoned, and more expensive, rice. The disease is most prevalent in September and onwards, when the rice has been subjected to the heat and moisture of the monsoon months ; the vegetable proteids are split up by bacterial or enzyme action into the more soluble digestive proteids, proteoses and peptones, and lastly to amines. High prices influence epidemic prevalence by leading to the hoarding of the rice in godowns.

It is pleasant to read that this research was made possible by the generosity of F. M. Kanga, Esq., of Bombay, where the disease does not occur.

A. G. B.

Francis (Edward) & others. **Tularaemia Francis 1921. A New Disease of Man.**— *Hyg. Lab. Bull.* Washington. Bull. No. 130. 1922. Mar. 87 pp.

Tularaemia is a specific infectious disease due to *Bacterium tularense*, and is transmitted from rodents to man by the bite of a blood-sucking insect, or by manipulating infected rodents in the market or laboratory. The etiology and the phenomena of the disease have already been considered in this *Bulletin* [Vol. 19, pp. 442–444], and a brief abstract of the present review and summary of previous investigations is all that is now necessary.

Cases of tularaemia have been known to occur in Utah among the rural population during the summer months since 1917 ; the first fatal case was reported in 1919. The disease also affects jack-rabbits and ground-squirrels in Utah.

Experimentally the disease can be transmitted by the Tabanid fly, *Chrysops discalis*, and the rabbit louse, *Haemodipsus ventricosus*, and these two insects are probably the usual agents of transmission in

nature to man and jack-rabbit respectively. It can also be transmitted to white mice bitten by or fed on infected bed-bugs ; the fresh and stale faeces of the bed-bug are also virulent and are infective when injected. The mouse louse, *Polyplax serratus*, and the Gamasid mite, *Liponyssus isabellinus*, can also transmit the infection.

The specific bacterium can be cultivated on coagulated yolk of egg ; on serum glucose agar, glucose blood agar, blood agar, and plain agar plus a piece of rabbit spleen ; on cystine agar, and on Loeffler's blood serum coagulated at 70° C.

All the laboratory people who have handled infected rodents have contracted the disease.

A. A.

Ledingham (J. C. G.). **Some Observations on Tularaemia.**—*Jl. Path. & Bact.* 1923. Jan. Vol. 26. No. 1. pp. 132–133.

A brief account of Lister Institute experiences of culture of *Bacterium tularense* received from Washington. As in Washington, the study of the organism proved more intimate than was desired, three of the investigators becoming infected and tediously incapacitated. During passage experiments it was observed that spleen films from guinea-pigs dead of tularaemia did not, as a rule, disclose the organism, although the characteristic gross changes in the spleen were evident. In mice, however, although gross changes in the spleen were not conspicuous, spleen films contained the organism in great abundance. The same phenomena were observed in the liver of these animals—in the guinea-pig the organisms could not be detected in the necrotic foci, in the mouse large numbers of individual liver cells were stuffed with them. By fractional centrifugation of emulsion of liver and spleen of infected mice a homogeneous suspension of the organism was obtained for serological study ; patients' sera agglutinated the organism in dilutions up to 1 in 800, the control sera having no such effect in dilutions of 1 in 10.

A. A.

Stephens (Horace E. R.). **Climatic Bubo.**—*Jl. Roy. Nav. Med. Service.* 1922. Oct. Vol. 8. No. 4. pp. 263–265.

During a year in the Far East (Wei-Hai-Wei) the author has noted the frequency of occurrence of acute and subacute adenitis in all regions of the body, and he here analyses 177 cases seen chiefly in civilian hospitals [no details of race or sex] ; 130 of these are described as a "heterogeneous collection of non-venereal buboes." The inguinal glands were affected 116 times, the crural 35, the axillary 12, the cervical in 7, and the author's thesis is that not a single case came under his observation where the point of entry of the micro-organism through the skin could not be identified—patches of dermatitis, mosquito bites, "toe-rot," and the like. The author explains the frequency of this type of inflammation by the fact that in hot damp weather the superficial layers of the skin become softened and rubbed off, leaving an easy entry for micro-organisms. [Granted that the definition of climatic bubo lacks precision, it seems probable that this paper should have been entitled Acute and Subacute Lymphadenitis in a Warm Climate.]

A. G. B.

MAGLIULO (Alfonso). **Note cliniche su 44 casi di bubbone climatico.** *Giorn. Med. Milit.* 1923. Apr. 1. Vol. 71. No. 4. pp. 159–174. [31 refs.]

Short descriptions are given of the 44 cases ; smears were made from punctures of the glands and cultures were attempted in several instances, with varied results. The author discusses the question of etiology, and concludes that the condition is not venereal in origin, but is due to local irritation aggravated by perspiration.

H. Harold Scott.

HOFFMANN (W. H.). **Linfogranulomatosis venérea y Bubón Climático.** [Venereal Lymphogranuloma and Climatic Bubo.]—Reprinted from *Rev. Méd. de Hamburgo.* 1922. Vol. 3. No. 11. pp. 323–324.

A brief but instructive paper, drawing attention to the points of similarity and of contrast between venereal conditions and the so-called "climatic bubo." Although a venereal history is not obtained in every case, the author is inclined to regard the latter as a "fifth venereal affection," the other four, of course, being hard chancre, soft chancre, gonorrhoea, and granuloma venereum.

H. Harold Scott.

SHAND (J.). **Climatic Bubo and a Few Experiences in China.**—*Jl. Roy. Nav. Med. Serv.* 1923. Jan. Vol. 9. No. 1. pp. 68–69.

The author from past China experience gives the following list of diseases cured in his practice by santonin only—and caused, in his opinion, by the round worm—chronic diarrhoea, colitis, dysentery, intestinal obstruction, appendicitis, gallstones, intestinal ulceration ; chronic bronchial catarrh, asthma, chronic pleural effusion ; neuritis and neuralgia ; enlarged glands ; splenic anaemia ; chronic abscesses. [Climatic bubo was merely the word which called up the reminiscences set down.]

A. G. B.

GOMEZ (Liborio), NAVARRO (Regino) & KAPAUAN (Amando M.). **The Schick Reaction in Filipinos.**—*Philippine Jl. Sci.* 1922. Mar. Vol. 20. No. 3. pp. 323–330. With 4 plates. [12 refs.]

The Schick reaction is used for determining the presence of immunity, either natural or acquired, to diphtheria toxin.

Mention has been made of the comparative infrequency of diphtheria in the Philippine Islands, in spite of the existence there of virulent diphtheria bacilli, and the Schick reaction was tested on Filipinos of all ages from six months upwards in order to investigate the cause of this low incidence of the disease.

The diphtheria toxin used in the tests was three years old. Altogether 1,030 individuals were tested (698 m. and 332 f.) : 88, or 8·5 per cent., were positive, that is, were presumably susceptible to the disease ; and most of these 88 were children in the first eight years of life. It is therefore concluded that young Filipino children are just as susceptible as children elsewhere, but that boys and girls of school age and adults are very much less susceptible.

A. A.

i. Sergent (Edm.), Béguet (M.), Parrot (L.), Lemaire (G.) & Vérité (H.). **Réaction de Schick et recherche des porteurs de germes dans une épidémie scolaire de diphtérie.**—*Arch. Instituts Pasteur de l'Afrique du Nord.* 1922. Sept. Vol. 2. No. 3. pp. 349–354. [1 ref.]

ii. Ciavaldini (Jean). **La réaction de Schick en milieu algérien.**—*Ibid.* pp. 355–357.

i. On the occasion of a small epidemic of diphtheria amongst the pupils of two primary schools in Algiers, of 101 children from 6–15 examined 9 were found to be carriers and 29 to have a positive Schick reaction, testifying to their susceptibility to diphtheria infection. In four instances the same subject was a carrier and susceptible. The Schick reaction was unequivocal from the third day onwards. The authors describe the positive reaction, pseudo-reactions, which are nearly always transitory, and paradoxal reactions, in which heated toxin provokes a stronger reaction than the unheated.

ii. A similar investigation in a small epidemic in Constantine. Of 45 children between 6–14 (11 European, 34 native) 19 gave positive Schick reactions. The percentage of susceptible European children was twice as great as that of the natives, which, the author writes, tends to confirm the current notion of the general immunity of the natives to diphtheria. The true reaction persisted for three weeks, and was attended by pigmentation and scaling. The pseudo-reaction appears promptly, disappears about the third day and does not give rise to scaling or pigmentation. Two carriers, brothers, were detected among the European children.

A. G. B.

Sumner (F. W.). **Diphtheria Carriers.**—*Brit. Med. Jl.* 1923. May 12. p. 808.

An outbreak of diphtheria took place at a school in Simla in March, 1922. Eight cases occurred between March 14 and 23—all infected by a boy from Karachi, suffering from the disease. The whole school of 200 boys received prophylactic injections of diphtheria antitoxin. Sporadic cases occurred in May (1) and July (2), after which six of the eight original patients were found to be carriers and were segregated. Between September 9 and 14 four more cases occurred and the school was closed.

All the boys and the servants with their families were then examined, and all with reddened throats or large tonsils marked for bacteriological examination. One case of mild diphtheria was thus found, and of 58 other subjects 50 per cent. were found to be carriers.

Evidently where antitoxin is used prophylactically on the outbreak of diphtheria one must look out for a crop of diphtheria carriers, for the symptoms are suppressed, but not the germs, though the author recognizes that probably some of the diphtheroids were not pathogenic. It is also noted that of the 15 cases of diphtheria two were negative bacteriologically and one of these was the only fatal case.

A. G. B.

Mouchet (R.), van Nitsen (R.) & Gérard (P.). **A propos de la fréquence des tumeurs chez les Noirs de l'Afrique centrale.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 253–256. [3 refs.]

Reference is made to a previous paper on this subject by two of the authors [see this *Bulletin*, Vol. 15, p. 305]. The present observations

were made in the Katanga during two years. Benign tumours apart, they relate to a small-celled sarcoma of the pancreas with metastases in the spleen and two primary carcinomas of the liver. In the first there were no metastases apart from glands in the lesser curvature of the stomach. The second was the case of a labourer who had been admitted to hospital for a fractured humerus and returned two months later with a spontaneous fracture at the callus. There was evidently a tumour, the arm was amputated, and the liver condition found on the operating table. This was a primary cancer of the biliary ducts.

Adding these observations to the former ones, we have 19 malignant tumours, comprising 8 connective tissue, 10 epithelial, and 1 mixed. Of the 10 epithelial tumours 8 were liver cancers.

Reference is made to Harvey PIRIE's paper [*op. cit.*, Vol. 20, p. 213], who attributes this condition to the presence of schistosomes. The authors say that they have looked in numerous sections for schistosome eggs, but have only once found them [*op. cit.*, Vol. 13, p. 203]. Bilharziasis is not seen in Katanga, unless imported. They note that PIRIE found four cancers of the pancreas, an equally unusual proportion, and this is not an organ in which foreign bodies from the blood-current are retained. They think some other explanation must be sought for the frequency of carcinoma of the annexa of the digestive tube in negroes.

A. G. B.

DUBOIS (A.). **Tumeur maligne chez un Nègre Baluba.**— *Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 151–152. With 1 plate.

The case of a tumour of rapid growth in the frontal region with a bony edge round the base. It was removed under chloroform and found to have perforated the skull. Examination showed it to be a typical carcinoma, certainly of metastatic origin. No autopsy was made.

A. G. B.

CHOPRA (R. N.) & GHOSH (B. N.). **The Therapeutics of Emetine.**— *Indian Med. Gaz.* 1922. July. Vol. 57. No. 7. pp. 248–253. With 6 charts. [12 refs.]

The emetic action of emetine is due to its locally irritating effect—for a 1 : 500 solution applied to the mucous membrane sets up a severe irritation.

In order to determine the local effect upon the tissues caused by emetine injection, a series of experiments was undertaken on rabbits and the action of tartar emetic and quinine bihydrochloride compared. Both substances caused oedema, and in the case of the latter salt, patches of necrosis; emetine, on the other hand, produced a slight subcutaneous and muscle oedema, no hyperaemia or necrosis. Weak solutions, such as 0·2 per cent., produced little local effect.

After injection emetine can be detected in the stomach, and increases the automatic movements of that organ and also of the intestines. Larger doses cause inflammation of the whole intestinal mucosa, and haemorrhages and even ulceration may occur. These pathological changes point to its excretion by the intestinal mucosa; haemorrhages occur in the lymphatic glands, spleen and kidneys. Peripheral neuritis is produced, as shown by DALE. The diarrhoea occurring during the course of emetine or ipecacuanha administration is probably due to the action of emetine upon the intestinal wall during its excretion. Experiments on isolated pieces of gut from emetinized rabbits and

guinea-pigs were carried out. The active piece of gut—2 in. long—was cut out of the lower portion of the ileum and suspended in a warm bath at 37·5° C. Tracings taken showed that even in a dilution of 1 : 250,000 emetine produced a distinct increase in the muscular tone and made peristalsis more regular and powerful ; this probably accounts for the diarrhoea, which should not be difficult to differentiate from that caused by the amoebic infection.

P. H. Manson-Bahr.

Robert (Léopold). **Un cas l'anaphylaxie locale à l'émétine. Oedème envahissant, prurit intense, puis érythème vésiculeux consécutifs à des injections d'émétine.**—*Bull. Soc. Path. Exot.* 1922. Oct. 11. Vol. 15. No. 8. pp. 680–683. [1 ref.]

The case of a Siamese prince, aged 41, who received for dysentery four injections of emetine in 1916, and again in 1920, with benefit and without reaction. Two months later he received two injections, and after the second suffered a fugitive oedema and slight itching. A few months later another relapse of dysentery occurred, for which eight injections of 5 cgm. emetine were given. After each there was oedema and pruritus, both increasing in intensity. In 1922 he consulted the author, who found dysenteric amoebae and gave an injection of 5 cgm. in the arm ; 22 hours later it was doubled in diameter, and the swelling extended from the axilla to the hand with much pruritus. The brand of emetine was changed and an injection given in the other arm, with the same result, plus fever. A third brand of emetine was now injected in the thigh ; the result was so much oedema that the patient was unable to walk, a large erythematous plaque, much pain and itching, and fever (38° C.). The author gave even a fourth injection, with like results, before suspending treatment.

The patient was then lost sight of for a time, but later received yet another injection from another doctor, when to the above described symptoms were added numerous vesicles on the forearm, remote from the point of entry.

A. G. B.

Ardin-Delteil, Azoulay (René) & Salles. **Polynévrite émétinique.**—*Bull. et Mém. Soc. Méd. Hôpit. de Paris.* 1923. May 3. Year 39. 3rd Ser. No. 14. pp. 633–635. [3 refs.]

A tailor, aged 40, with dysentery, received by error six series of three subcutaneous injections of emetine hydrochloride (4, 8 and 10 cgm.), 1·22 gm. in all, between December 14 and January 22. On January 23 he complained of extreme fatigue and weakness, especially in the arms. By February 9 he could hardly walk. He had great difficulty in getting on to his bed and in rising after squatting. Reflexes of upper limbs and knee-jerks diminished. Some diminution of excitability of limb muscles to faradic and galvanic currents. Pulse 120. Three weeks later the patient had recovered, but the reflexes were still diminished. He had received in the same period four injections of arsenobenzol, a total of 0·9 gm. in a fortnight, but it is not thought that the polyneuritis was arsenical. [For emetine poisoning, see this *Bulletin*, Vol. 12, p. 436 ; Vol. 20, p. 62.]

A. G. B.

Lichtenstein (A.). **De giftigheid en de doseering van hydrochloras emetini.** [The Toxicity and the Dosage of Emetine Hydrochloride.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 4. pp. 490–502.

A fatal case of emetine poisoning is described, due to over dosage. Lichtenstein deals once more with the toxic action of the drug, which he considers to be chiefly a paralysing influence on the vagus. Light

cases of intoxication (muscular weakness and pain, palpitation, diarrhœa) are common, even after doses thought to be moderate. The author gives his experience in 85 cases of amoebic dysentery, showing that after five injections of 60 mgm. emetine hydrochloride, subsequent injections bring no improvement. He emphasizes the opinion of Balfour and Pyman, who state that it is "useless, unwise and wasteful to subject patients to repeated, long-continued courses of the drug."

W. T. Bais.

Mason (V. R.). **Sickle Cell Anemia.**—*Jl. Amer. Med. Assoc.* 1922. Oct. 14. Vol. 79. No. 16. pp. 1318–1320. With 2 figs. [6 refs.]

Sickle cell anaemia is a persistent grave anaemia, not associated with any palpable enlargement of the spleen, but characterized by the sickle-shaped, oat-shaped or elliptical transformation of many of the red blood-cells. So far only four cases seem to have been noticed, one in a negro, two in patients "described as negroes," and one in a mulatto [see this *Bulletin*, Vol. 7, p. 329].

As regards the condition of the blood, apart from the peculiarity from which the distinctive name is derived, the red cells are reduced to from 2,000,000 to 3,000,000 and the leucocytes are increased to 12,000 to 15,000 or more per cmm., a small number of nucleated reds and a few myelocytes are present, a few reds show diffuse or punctate basophilia, and a large number of reds can be vitally stained with brilliant cresyl blue. In two cases there was a slight relative and a marked absolute eosinophilia. The platelets do not appear to be diminished, but no counts were made; there is no increase or decrease of fragility of red cells; the clotting time is normal; there is marked anaemia with a colour-index near unity.

No parasites have been discovered in blood, faeces, or urine. Syphilis has been excluded. There is no history of haemophilia, but in every case a history of lifelong weakness and general debility, and in one case there was suspicion of congenital taint.

As regards the symptoms, besides persistent weakness, all the cases had swelling of the ankles and ulcers of the legs, and two had repeated attacks of abdominal pain concurrent with fever and jaundice and (in one case) gall-stones.

As regards physical signs, they were those usually encountered in severe and long-standing anaemia; in three cases the sclerotic had a peculiar greenish colour, and in two there was a slight and general enlargement of glands and scanty pubic and axillar hair.

Of the four reported cases two were males and two females; two were born in Virginia and had never been far away, one had never left the vicinity of St. Louis, and one came from the West Indies.

The differential percentage count of red cells in the one case here reported was as follows: Approximately normal, 50·4; sickle-shaped, 3·4; oat-shaped, 14; irregular and misshapen, 14·4; macrocytes, 11; microcytes, 6·8.

In the same case the results of six blood-investigations made at intervals during 12 months show the following figures: Red cells per cmm. varying from 1·96 to 2·75 million, leucocytes from 12,400 to 20,700. Haemoglobin per cent. from 39 to 58. Colour index from 0·8 to 1·2. Neutrophil polymorph percentage from 41·2 to 77·2

eosinophil from 0 to 2, basophil from 0 to 2, small mono from 15·6 to 52·6, large mono from 2 to 7·5, transitional from 0·3 to 3·6, myelocytes from 0 to 7·4. Normoblasts per 250 leucocytes from 0 to 305, megaloblasts from 0 to 4.

A. A.

Bercovitz (Nathaniel). **Gangosa in Hainan ; Report of another Case.** —*China Med. Jl.* 1922. May. Vol. 36. No. 3. pp. 203–205. With 1 plate.

This is a case report in a male native of a very remarkable degree of ulceration of the nose and mouth, beginning as a bulla. Similar ulceration took place on the neck, and all the affected sites scarred with great contraction so that the orifice of the mouth was reduced to a quarter of an inch diameter [*sic*], and the man became emaciated through under-nourishment. Syphilis was admitted as an antecedent disease ; yaws could be excluded.

E. G. G. Little.

Prall (S. R.). **A Case of Multiple Haemorrhages.**—*Indian Med. Gaz.* 1922. Aug. Vol. 57. No. 8. pp. 299–300.

The patient, a glassblower, aged 23, resident one year in India, was admitted to hospital, having spat about 6 oz. of blood. Haemorrhages were noted on tip and base of tongue, circular patches, one-third inch in diameter ; when the clot was removed, oozing continued. There was also bleeding from the gum margins. Petechiae varying in size, having no relation to the hairs, were scattered over the thorax, abdomen and limbs. Soon after admission blood was passed by the urethra, and the next day the temperature rose to 102°. Bleeding into skin and mouth and haematuria continued. A turpentine enema brought away blood, new and old. No malarial parasites could be found. Calcium chloride was given in large doses by the mouth and needle, and three days later the haemorrhages ceased. No quinine was administered. Five months later the patient died suddenly at another station after eight days' illness " from syncope resulting from malignant malaria." Haemorrhage was noted from the tongue and gums and ecchymosis in the conjunctiva.

The symptoms, the author writes, suggested viperine poisoning, but there was no history of such. The diagnosis of scurvy was rejected. [Does not this suggest onyalai, a condition described in the text-books of tropical medicine, a case of which was recently recorded in this *Bulletin* (Vol. 17, p. 241)?]

A. G. B.

Matheson (Farquhar). **Encephalitis lethargica in Samoa.**—*New Zealand Med. Jl.* 1922. Oct. Vol. 21. No. 105. pp. 267–271.

Seven cases of this affection were treated at the Apia Hospital in 1922, between February and April—the wet season. They were drawn from various parts of the island of Upolu ; no cases were reported from Eastern Samoa. Samoa suffered severely from influenza in 1918, and again from a milder epidemic in 1920 ; in 1921 there was measles. Of the seven cases, which do not seem to have presented unusual features, five recovered and two died ; all but one showed lethargy and more or less extensive paralysis. The author is inclined to attribute the high recovery rate to the production of a fixation abscess by the injection of turpentine under the skin.

A. G. B.

CAMPBELL (J. Argyll). **Rickets in Singapore.** [Correspondence.]—*Lancet.* 1922. Dec. 16. p. 1304.

Dr. Leonard HILL has stated on the writer's authority that rickets is prevalent in Singapore in spite of the sunny climate. The writer says that this is an error, rickets is very rare at Singapore, but infantile scurvy is not infrequent and is successfully treated only by change of diet.

A. G. B.

VAN NITSEN (R.). **L'Optochin et le sérum optochinisé dans le traitement de la méningite pneumococcique.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 271–275. [3 refs.]

Optochin, or ethylhydrocupreine, has been recently recommended for the treatment of pneumococcal meningitis, and has been used with success by ROSENOW. The author gives by the mouth six doses of 25 cgm. or three of 50 of basic optochin within 24 hours ; half an hour after the last dose he withdraws 30–40 cc. of blood ; the serum is poured off and, mixed with a little phenol, keeps well. For intrathecal injection 5 cc. are given every 12 or 24 hours till the temperature falls or the meningeal symptoms disappear. Of 16 cases thus treated eight recovered. Of the latter, details are given in a table, which shows the effect of the treatment on the temperature and cerebrospinal fluid, in which in four cases pneumococci were present. In six of the failures intervention was late ; the seventh succumbed to his lung lesions. Whether the action is to be attributed to bactericidal power of the serum or to the minute quantity of optochin contained is unknown. Other methods of treatment have been ineffective. It is generally believed that pneumococcal meningitis is a fatal disease in the native of Belgian Congo, but statistics are wanting. The author stresses the importance of the early employment of the serum.

A. G. B.

CONCEPCION (Isabelo). **The Incidence of Diabetes Mellitus among Filipinos.**—*Jl. Philippine Islands Med. Assoc.* 1922. Mar.–Apr. Vol. 2. No. 2. pp. 57–63. [8 refs.]

The mortality from diabetes has gradually increased in the city of Manila from 0·8 per 100,000 in 1913 to 4·1 in 1920. This is due to the greater accuracy of the vital statistics ; the figures for the *per capita* consumption of sugar in the same years show little increase. The incidence of diabetes in the Philippines is much less than in other countries, including Japan ; 69 cases occurred in Manila in 11 years. A table from IWAI shows Breslau at the top with a mortality of 19 per 100,000 inhabitants, and Moscow at the bottom with 1·7. Intermediate come Calcutta 18·8, Edinburgh 14·7, New Zealand 10·6, Rome 8·6, Havana 3·6, Singapore 2·9. Sixty per cent. of the author's cases were males. The most frequent age period was the decade 40–50, as is the case also with Japanese and Chinese ; among Europeans the disease occurs most commonly between 50 and 70. Diabetes in Filipinos is of a mild type, the mortality is very low, and only a small percentage die from diabetic coma. [Diabetic coma is rare also in India. (See this *Bulletin*, Vol. 16, p. 210, and elsewhere.)]

A. G. B.

Trolli. **Un cas présentant les symptômes de rhumatisme articulaire aigu, réfractaire aux traitements habituels et guéri à la suite d'injections d'émétique.**— *Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 179–182.

An Italian, aged 38, a purchaser of hides, 10½ years in Belgian Congo without illness, even malarial fever, living at Kigoma (Tanganyika) where the climate is good, was seized on June 15 with sharp pains in the arm joints and left leg without fever or other disturbance, leaving him the next day. 17th, return of pains in right shoulder with fever and profuse sweating. 18th, seen by author, T. 38°, right shoulder affected, no effusion or inflammation, blood examination negative for malaria, spirochaetosis and trypanosomiasis; repeated blood examinations revealed nothing. For next seven days the pains passed rapidly from one joint to another, leaving no trace behind, temperature between 38° and 39°, profuse sweats. Acute articular rheumatism diagnosed and salicylate prescribed. June 24, patient admitted to hospital. July 3, fresh attack of pain in left wrist and knees, fever. Treatment by " collobiase " of sulphur and mercury, pot. iod., aspirin, electargol, novarsenobenzol was resorted to without more than temporary benefit, but pain continued in the same irregular manner. By August 17 patient was thin and anaemic, pains were very acute, sweats abundant, with decided odour of mouldy straw. Resort was now had to tartar emetic injections, at first 0·06 gm., rising to 0·1 gm. on alternate days. Improvement set in and was progressive, and on 11th [? September] patient got up feeling well. His health has since been excellent.

The author thinks this may have been acute articular rheumatism, but prefers the diagnosis of undulant fever. Against the former is the failure of salicylates, absence of effusion and swelling, abrupt appearance of first symptoms, absence of heart complications. In favour of undulant fever is the patient's occupation, the character of the sweats, the abruptness of the first attack, and the erratic involvement of the joints. He has no doubt that the disease was brought to an end by the tartar emetic.

[The date on which tartar emetic was commenced is not given, but was apparently in the latter part of August when the disease might be terminating naturally. The temperature chart is not given, and no mention is made of serological tests.]

A. G. B.

Oudendal (A. J. F.). **Over het amyloide in de tropen.** [Amyloidosis in the Tropics.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 6. pp. 708–720. With 1 folding coloured plate.

The apparent rarity of amyloid in the tropics is not in accordance with the great prevalence of common causes of this tissue degeneration (chronic ulcerations, malaria, tuberculosis, yaws).

A case is described of a Javanese man of 40 who showed distinct amyloid degeneration of the vessel walls.

Davidson produced amyloid in rats by bacterial irritation in 50 per cent. of his cases, but never succeeded in producing it in animals after previous extirpation of the spleen. The spleen appears to have an active influence on the production of amyloid, either by secretion of ferments or otherwise.

A normal spleen is rarely met with in inhabitants of tropical countries, but in the quoted case the spleen was small and microscopically showed a normal aspect.

Possibly the frequency of morbid affections of the spleen gives the explanation of the rarity of amyloid in the tropics. Other tissue degenerations (fatty, hyaline) are common enough.

W. J. Bais.

Kouwenaar (W.). **Over Maagzweren in Deli.** [On Gastric Ulcers in Deli, E.C. Sumatra.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 6. pp. 721–740.

Among about 2,000 Chinese coolies in Sumatra, Kouwenaar within two years met with 25 cases of gastric, or duodenal, ulcer, which frequency is remarkable in view of the asserted rarity of this condition in the tropics. In 709 post-mortems in Chinese, 49 ulcers were found either as cause of death (22) or accidentally (27). In Javanese coolies, living under the same circumstances, gastric ulcer is very rare. In Chinese the disease becomes more frequent as age increases, or after a long time spent in the tropics. Possible causes of the liability of Chinese to gastric ulcer are discussed (opium, change of climate, racial difference, the Chinese habit of swallowing food very hot), but no definite conclusion is arrived at. The author, who states that gastric ulcer is fairly common too in European immigrants in the tropics, considers it more useful to find out why Javanese and other aborigines of the tropics do *not* suffer from gastric ulcer.

W. J. Bais.

Pena Chabarria (Antonio). **Bubón de Veléz.**—*Repert. Med. y Cirug.* Bogota. 1922. Oct. Nov. Dec. Vol. 14. No. 1, 2, 3 (Nos. 157, 158, 159). pp. 10–32 ; 52–70 ; 100–115.

A somewhat lengthy description of a condition one of whose many synonyms is " Espundia," in Peru. In the later stages it bears a strong clinical resemblance to leishmanial espundia. The disease, however, is due to a blastomycosis, and may be divided into two stages. The first is that of a local sore on some exposed part of the body, and is said to arise by mechanical infection of a wound or abrasion by *Musca domestica* or, more probably, the reduviid bug, *Rhodnius prolixus*. This leads to the production of an encrusted ulcer about an inch in diameter, taking several months to reach full development ; there are often smaller ulcers in its neighbourhood which in their growth unite with it. After one to three years the secondary stage begins—an ulcerative naso-pharyngitis closely resembling Espundia, which may extend to the larynx and destroy cartilage and even bone. The disease shows no predilection for sex or age, though perhaps it is a little more common in the young.

The diagnosis is discussed fairly fully, particularly the differentiation from syphilis, tuberculosis, and rhinoscleroma. From leishmanial infection it is readily distinguished by the constant presence of the blastomycosis and the absence of Leishmania. The organism is easily cultivated on Sabouraud's media.

Treatment is not very satisfactory. The best results were obtained by a combination of potassium iodide and tartar emetic, the latter intravenously, starting with 2 cc. of a 1 per cent. solution, and, if well borne, increasing to 5 cc. administered every three days.

H. Harold Scott.

Van Nitsen (R.) & Walravens (P.). **Sur une épidémie de manifestations bronchopulmonaires et leur traitement.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 147–150.

In August and September a broncho-pulmonary epidemic occurred at Likasi (Katanga) among labourers housed in a brick barrack; others inhabiting straw huts kept free. The sequence of symptoms was headache, cough, slight fever, bronchitis with blood-stained mucopurulent or gelatinous sputa. Complications were frequent. Of the 365 cases, 106 had pneumonia, 50, or 13·6 per cent., died, and among these autopsy showed 41 cases of lobar pneumonia, 3 of bronchopneumonia, 6 mixed pneumonia, and 8 pneumococcal meningitis. In 100 microscopical examinations of sputa the pneumococcus was found 57 times, Pfeiffer's bacillus 68 times and *Spirochaeta bronchialis* 78 times, other organisms less frequently.

The clinical course of the bronchitis favoured the diagnosis of broncho-pulmonary spirochaetosis which was first reported in the Union Minière in December 1920. The authors consider that upon this soil was implanted the Pfeiffer bacillus, exalting the virulence of the other microbes and especially the pneumococcus. Of treatments tried the most successful was a polyvalent vaccine; of 56 cases treated with this 8·9 per cent. died.

A. G. B.

Oudendal (A. J. F.). **De Algemeene Pathologie der Tropische Levercirrhose.** [The General Pathology of Tropical Cirrhosis of the Liver.]—*Meded. Burgerlijk. Geneesk. Dienst in Nederl.-Indië.* 1922. Pt. 4. pp. 236–248. With 14 figs. [1 ref.] Also *Geneesk Tijdschr. v. Nederl.-Indië.* 1923. Vol. 63. No. 2. pp. 205–224. With 14 figs. [1 ref.]

Malay and Chinese spleens, as observed at autopsy in Weltevreden, are, relatively to body-weight, considerably larger and heavier than those of Europeans; adhesions to neighbouring structures are also more frequent. The increase of the liver in volume and weight is commonly due to a non-suppurative hepatitis, the stages of which are very fully described and figured in this paper. Ultimately, no doubt, the process—proliferation of connective tissue and hepatic ducts, infiltration of leucocytes, and degeneration of hepatic cells and nuclei—ends in fibrosis. As to the cause of this tropical cirrhosis, the author is inclined to attribute it not to malaria, but to the habitual use of strongly spiced food.

A. A.

Parkinson (W. R.). **Three Cases of Multiple Symmetrical Peripheral Neuritis following Acute Poisoning.**—*Nigeria Ann. Med. & San. Rep. for the Period 1919–21.* p. 39.

Eight Kroo natives ate cassava which had been poisoned to prevent its removal. One died and three were admitted to hospital six weeks later. The illness began with vomiting for some days, followed by weakness of both arms and legs. There was multiple symmetrical peripheral neuritis affecting legs and arms below the hips and shoulders. Wasting of muscles was general. Reflexes were absent and tactile

sensation was dulled. Four months produced little change, and the flexor muscles gradually contracted, as pain forbade the application of splints. The diagnosis was chronic poisoning, the result of acute arsenical poisoning.

A. G. B.

WRIGHT (Clarence). **Some Less-known Methods of Arsenical Poisoning.** [Correspondence.]—*Lancet.* 1922. July 22. pp. 203 204.

When the author was associated with the Chemical Examiner to the Government of India, Madras Presidency, he had to trace the manner of administration of arsenic in 11 obscure cases. Nine deaths proved to be due to " koyahism," to which the death of Alexander the Great has been attributed. *Koyah dhaurwah* is the graduated administration of arsenic and chlorophyll in dry powder form ; *koyah petharah* the development of a strain of yeast plant by faex-culture upon a medium of palmera juice and arsenic ; the latter is practised by the Dravidians. These mixtures, or processes, the author states, have been of great value in malarial regions. Deaths are usually due to amateurs in this line.

A. G. B.

SWARUP (Anand). **Acute " Kodon " Poisoning.**—*Indian Med. Gaz.* 1922. July. Vol. 57. No. 7. pp. 257–258.

Kodon is *Paspalum scrobiculatum*, a kind of millet. It is a cheap grain, largely eaten by poor people in the United Provinces. The author records four cases of poisoning, coming on one and a half hour after eating the flour. The symptoms were giddiness, vomiting for several hours, unconsciousness, small and frequent pulse, cold extremities, tremors ; no change in the pupil and no diarrhoea. All recovered. [*Cf.* this *Bulletin*, Vol. 16, p. 224.]

A. G. B.

WOODCOCK (H. M.). **Are the Active Principles of Filter-Passing and " Ultra-Microscopic " Viruses Living Organisms or Enzymes ?**—*Jl. Roy. Army Med. Corps.* 1922. Oct. Vol. 39. No. 4. pp. 243–260. With 10 figs. [1 ref.]

The author with no little ingenuity here extends the scope and venue of his theory of haematophagy.

According to that theory [see this *Bulletin*, Vol. 19, p. 620] tissue-cells, under the malefic influence of certain stimuli, may become deranged, and may revert to an instinct (normally latent) of feeding on solid food, particularly red blood cells. Among the objective micro-physical signs of such abnormal behaviour are perhaps Kurloff, Negri and Guarnieri bodies, Chlamydozoa and the Rickettsiae. As to the morbific stimuli, they, perhaps, are specific ferments which, once started, go on and on like an avalanche.

In the present paper, starting from the minute filterable granules supposed by some to be causal " organisms " of influenza, he develops the theory that these granules are the analogues of the inclusions of Chlamydozoa, etc. ; that they are the results of " autolysis " of tissue cells, brought about by specific autogenous or self-subsisting ferments ; and that the ultra-microscopic filterable viruses in general are self-subsisting ferments of the same nature.

Minute Giemsa-staining granules, quite like the conjectural influenza organisms, can be obtained from normal nasal secretion. In this secretion may be found, *inter alia*, epithelial cells with the nucleus in all stages of disintegration. When the disintegration is complete the nucleus is transformed into dust scattered through the cytoplasm. But this dust, though it stains like chromatin with Giemsa, cannot be chromatin, since it is quite indifferent to iron-haematoxylin—the latter stain apparently being, in the author's opinion, an infallible criterion of chromatin.

So far the author is dealing in verifiable fact. Going beyond these facts, the author is inclined to assume that Rickettsia, and perhaps even other filterable " organisms," which cannot be cultivated, but are associated in theory with definite pathological conditions, may be of the same nature as the influenza " organisms "—protein dust derived from auto-caryolized nuclei.

The author, now fairly entered into the realm of speculation, suggests that this ultra minute protein dust, though it may not be pathogenic in itself, may yet be the outward sign of a pathological process—*non quis sed quid*. It may be the carrier of the pathological ferment by which it was itself produced.

This hypothetical ferment appears to be analogous with the hypothetical pathological ferment that gives rise to haematophagy. As to its origin, if the epithelium of the venom gland of a serpent can produce a cytolytic toxin, if a specific bacterium can produce a bacteriolysin, why may not other tissue-cells under some uncontrollable stimulus produce an auto-cytolytic or auto-caryolytic ferment? Once this ferment is set a-going, it goes on—*crescit indulgens sibi*. Moreover, once this pathological auto-cytolytic process has become established in one individual, might it not be transmissible to other individuals It is here that the ultra-microscopic protein granules—themselves the product of auto-cytolysis—might come in as carriers of the ferment.

These speculations are decidedly interesting and stimulating, and we hope that in the course of time the author may make the origin of the masterful autogenous auto-cytolytic or auto-caryolytic ferment comprehensible.

A. A.

Woodcock (H. M.). **"Rickettsia"-Bodies as a Result of Cell-Digestion or Lysis.**—*Jl. Roy. Army Med. Corps.* 1923. Feb. & Apr. Vol. 40. Nos. 2 & 4. pp. 81–97. With 14 figs.; & pp. 241–269. With 9 text figs. [21 refs.]

Bodies, many of which have been specifically distinguished by name under the generic term *Rickettsia*, are now known to be of fairly common occurrence among parasitic, mostly blood-sucking, Arthropods. Usually the Rickettsias are affiliated to Bacteria, although they do not stain—or stain ill—with aniline dyes, take a red or purple stain with Giemsa, and are cultivated with the greatest difficulty, if at all.

The author considers, to begin with, certain granules observed by him in Giemsa-stained smears from the gut of the ked (*Melophagus ovinus*). He considers, with an abundance of figured illustrations, their form, size and staining reactions, their posture and nebular agglomerations, and their association with trophonuclei and kinetonuclei (or with recognizable fragments of these structures), and while finding them quite indistinguishable from the bodies described by Nöller as *Rickettsia melophagi*, he concludes that they are really granules

resulting from the disintegration—and in some cases the intracellular digestion—of the flagellates (*Crithidia melophagia*) normally inhabiting the ked's gut. Granules apparently identical with Rickettsia have also been traced by the author in smears of a culture of *Leptomonas pattoni*, the flagellate of the European rat-flea, and these also are interpreted as constellations of disintegrated flagellates.

Granules, or bodies seemingly identical with Rickettsia, have also been traced by the author in smears of the gut of a bird-mite (*Dermonyssus*), and are plentifully figured in his paper. The author interprets them as being derived partly from digested nuclei of the bird's red blood corpuscles, partly from disintegration of nuclei of cells desquamated from the mite's gut, and partly (and abnormally) from the ingested (and imperfectly digested) haemoglobin of the bird. These granules can also be seen in the eggs of the mite, and by upholders of the microbial nature of Rickettsia are regarded as evidence of an hereditary infection ; the author, however, explains them as being, like the particles of foreign haemoglobin sometimes found in the same situation, deutoplasm or granules taken up and stored in the yolk for the nourishment of the embryo.

Having traced the origin of " Rickettsia bodies " in disintegrated or digested intestinal flagellates, disintegrated and digested nuclei of intestinal epithelium, and imperfectly or abnormally digested haemoglobin, the author finds an obvious connexion between his theory of origin of Rickettsia bodies and his theory of haematophagy as a pathogenic process [see this *Bulletin*, Vol. 19, p. 620]. According to the latter theory, typhus is an abnormal manifestation of haematophagy by endothelial cells incited by some pathogenetic ferment ; and according to the theory of Rickettsia-origins the Rickettsia bodies found in endothelial cells in typhus are the evidence of this abnormal process of haematophagy, not the cause of it—*non quis sed quid*.

The author's explanation of the origin of Rickettsia bodies can be followed with the appreciation to which they are entitled only with the help of the actual figures in the text of his paper.

A. A.

Besredka (A.). **Immunité générale par immunisation locale.**—*Bull. Inst. Pasteur.* 1922. June 30 & July 15. Vol. 20. Nos. 12 & 13. pp. 473–481 ; 513–524. [11 refs.]

[Although it opens out ideas of the widest generality, this interesting paper embodies an argument logically developed from experimental data.]

Since the advent of serotherapy, immunization has been assumed to be a matter of antibodies : infection, the demonstration of antibodies, immunity, have been placed in a necessary relation of cause and effect.

This exclusive belief in the phylactic necessity of antibodies remains rooted, despite the facts that in the course of immunization against anthrax antibodies appear late in the day or not at all, that an experimental immunity may not be acquired until antibodies have disappeared, that immunity persists after viricidal properties have gone from the blood, and that there is no constant relation between the viricidal content of a serum and the degree of immunity.

The argument maintained in this paper is that immunity is, in the first instance, the result of local cellular processes achieved in the organ peculiarly susceptible to the particular virus : as a result of infection the particular organ becomes impervious to that virus, and this local

immunity has been misconceived as an immunity entirely due to a general reaction of the organism. The author does not reject the doctrine of phagocytosis, nor does he deny that in massive infections, where a virus has broken the resistance of the susceptible organ and burst its primary bounds, other defensive powers, including antibodies, may be brought into action. But he thinks that the theory of phagocytosis is based too much on observation of invertebrate animals, where leucocytes play a predominant or exclusive part in the phenomena of infection and immunity, and that it takes too little account of the fixed phagocytes of vertebrate tissues. He thinks, indeed, that in the conception of an organism as a complex of interdependent organs the fundamental physiological and pathological independence of the individual organ [and tissue] has been too much forgotten.

To follow the steps of the argument: as an example of immunity attained by a particular organ, without any concurrence of antibodies, the author offers a study of anthrax in the guinea-pig. In the guinea-pig anthrax is primarily—perhaps purely—an infection of the skin, for if great care be taken to avoid contaminating the skin pure anthrax virus can be injected into the animal's peritoneum without any ill-result. The animal, however, is not immunized against anthrax by any such treatment, and is, indeed, one of the most difficult of all animals to immunize by any method except by inoculating the virus *into* the skin. By inoculation *into* the abraded skin the animal can be brought to tolerate enormous doses of virulent anthrax—and without the appearance of antibodies. The skin is the organ susceptible to this infection, and the skin alone is docile to immunization.

As an illustration of immunity acquired or created by a particular organ, with inert concurrence of antibodies, some observations on vaccinia in the guinea-pig are offered. Although its selective affinity for skin may not be so pronounced as that of anthrax, vaccine virus affords another instance of cuti-infection, cuti-vaccination, and cuti-immunity. If vaccine virus is injected into the peritoneum of a guinea-pig (with due care to avoid contamination of the skin), the animal is not thereby vaccinated, although antibodies appear; it still remains susceptible to vaccination into the abraded skin. Antibodies appear howsoever the vaccine is introduced, but they have no immunizing properties when they are injected separately from the virus.

Instances of the existence of a localized natural resistance, which can be weakened or strengthened artificially, are afforded by the pulmonary epithelium. To kill a rabbit by intra-tracheal injection of paratyphoid virus, ten times the dose sufficient for subcutaneous injection is required; but this lethal intra-tracheal dose can be reduced to one-fiftieth or to one-hundredth if the pulmonary epithelial barrier be breached—as by the action of bile. On the other hand, the pulmonary epithelial barrier can be strengthened, as is shown in experiments where two series of guinea-pigs were vaccinated thrice successively with killed diphtheria bacilli—one series by way of the trachea, the other series subcutaneously: when, subsequently, the individuals of both series were inoculated severally with a lethal dose of living diphtheria bacilli, only those that had been vaccinated by way of the trachea survived. In these experiments no antibodies could be discovered.

The author next brings forward examples of viruses which, though they may appear to strike all parts of an organism with equal severity, and though their endotoxins act more or less banefully on the tissues generally, yet have a strong selective affinity for the intestine, namely, the viruses of dysentery (Shiga), typho-paratyphoid, and cholera.

If a strong dose of the Shiga virus be injected into the vein of a rabbit's ear and the animal be examined immediately after death the bacilli will be found in swarms throughout the small intestine, but not in the blood, or urine, or in other organs. The small intestine is for this bacillus what the skin is for anthrax. Similarly the intestine of the rabbit can best be immunized against this bacillus by the buccal route ; and this holds good for man also, for NICOLLE introduced living dysentery virus *per os* into two persons who had been vaccinated *per os* with killed dysentery cultures, and two persons who had not been so vaccinated, with the result that the two former were not affected, whilst the two latter contracted dysentery [this *Bulletin*, Vol. 20. p. 115.] Here we have an illustration of entero-infection, entero-vaccination, and entero-immunity.

In the case of man the special affinity of the typho-paratyphoid and cholera viruses for the small intestine needs no comment, but in the case of the rabbit this affinity is completely occulted, when the bacilli are swallowed, unless the intestine has been cleared of its protective mucus by a powerful cholagogue such as ox-bile.

It follows from this series of observations that for immunizing-vaccination against these entero-infections the buccal is the quickest and most direct route ; the intestine will certainly be reached by other routes, but with delay and loss *en route*.

A. A.

LEVADITI (C.) & NICOLAU (S.). **Ectodermoses Neurotropes. Etudes sur la Vaccine.**—*Ann. Inst. Pasteur.* 1923. Jan. Vol. 37. No. 1. pp. 1–106. With 2 coloured plates, 17 text figs., 7 charts and 14 diagrams. [Numerous refs. in footnotes.]

This instructive and suggestive study of the virus of vaccinia is a logical issue of LEVADITI's theory that while *Mesodermoses*, or infections of tissues of mesodermal origin, are generally effected by bacteria or fungi or spirochaetes or protozoa, *Ectodermoses*, or infections of tissues derived from the ectoderm, are for the most part provoked by filtrable ultra-microscopic viruses.

Among the ectodermoses LEVADITI distinguishes a Neurotropic group, including cowpox, encephalo-meningitis, and herpes—all intimately related—to which the present paper may be regarded as a master-study.

Having, by a described technique, obtained a fixed vaccinia virus, or neurovaccine, comparable by standards of constancy with fixed rabic virus, the authors have investigated its nature and properties, its election for tissues, and the arcana of its immunization.

This neurovaccine, obtained by passage of vaccinia virus through brain of rabbits, is an energetic virus whether by cerebral or cutaneous route, and its virulence can be long conserved in glycerine or glycerinated yolk of egg (at least 205 days in glycerine in the refrigerator). It differs from ordinary stock vaccine ("dermovaccine") in its more definite neurotropic affinities, its subtler selection of the ectodermal elements of the integument, and its greater sensibility to heat (being destroyed at 55° C. = 131° F.). Man reacts to it by cutaneous inoculation almost exactly as to ordinary vaccine ("dermovaccine"), over which it has the practical advantages of purity, constancy, and long keeping. Of all animals the rabbit appears to be the most susceptible, equally by intracranial or cutaneous or intravenous route, or even by inoculation into a peripheral nerve ; and in this animal the

virus tends when inoculated into one susceptible tissue to become generalized in others—*e.g.*, when inoculated into the brain to attack also the depilated skin and the buccal mucosa—and this selective generalization is rapid.

The virus has a particular election for tissues of ectodermal origin—skin, cornea, brain, bucco-pharyngeal mucosa, and mammary gland, but most particularly for the first three. This selective affinity is not quite exclusive, but is also extended to certain endodermal derivatives, namely, the epithelium of the lungs, the germinal glands, the suprarenal capsules and (doubtfully) the liver. The virus completely disregards tissues derived from the mesoderm ; for instance, it is quite inert when injected into the peritoneum. Its affinity for ectoderm is well exemplified when it is injected into a blood-vessel of a rabbit having a patch of skin depilated : on the fourth day after the injection an eruption appears on the depilated patch. Histological investigations of the depilated patch show that there has been an initial diapedesis of leucocytes (probably consequent on depilatory injury), then immoderate mitotic proliferation—almost neoplastic in effect—of the cells of the Malpighian layer and follicles, and last of all necrosis and invasion of the proliferated nests of cells by phagocytes. The virus, which revels in the actively proliferating nest of cells, is thus proliferative and necrotic in action.

Experiment shows that neurovaccine confers immunity against dermovaccine, and vice versa ; and that, with the single exception of the cornea, any particular ectodermal tissue in acquiring immunity to the virus imposes or entrains immunity on the other susceptible tissues. For instance, when as a result of local inoculation the skin has acquired immunity, that immunity is equally shared by the brain and testis.

The authors, however, do not countenance the theory that the general ectodermal immunity following successful resistance to an infection originally localized in one ectodermal tissue is due, to any great extent, to microbicidal principles circulating in the blood. On the contrary, they hold that each ectodermal tissue makes its own cellular resistance to the virus, and that the generalized immunity is in the main a confederation of individual and independently acquired immunities. They base this view on experimental observations, the gist of which may be briefly sketched as follows :—

(1) The virus itself does not remain localized in the ectodermal tissue into which it was inoculated ; neurovaccine injected into testis or trachea soon appears in a scarified skin. (2) Excision of an original focus of inoculation, even after an interval as short as 48 hours, does not prevent the acquirement of generalized immunity. (3) Actual lesions are sometimes found in ectodermal tissues other than the one originally inoculated with the virus. (4) In the brain of a susceptible animal the virus lives and flourishes for several days ; in the brain of the immunized animal it is destroyed very rapidly. (5) Partially immunized ectodermal tissues show the reactionary cellular proliferation. (6) The triturated brain of an immunized rabbit will completely fix the virus in vitro, while its serum will do so only to a limited extent. (7) In the blood of animals vaccinated against herpes no antibody capable of destroying encephalitic virus can be found, whereas the brain of such animals fixes and destroys that virus.

The authors have been led to a supplementary study of the ultramicroscopic virus of contagious epithelioma of fowls, which has considerable affinity with that of vaccinia. It also, when injected into

the blood of the fowl, shows an affinity for the germinal cells of the ovary and for the axial nervous system, and when inoculated into the skin of the rabbit excites mitotic proliferation of the epithelial cells. In particular circumstances it can excite or can inhibit the natural or the acquired immunity of the cock's comb to vaccine virus.

The conclusion as regards these ectodermoses is that each susceptible tissue defends itself by the activity of its own cells. Immunity once acquired is transmitted to daughter cells, and so on to descendants, though in course of time the immunity wears out. It will wear out quicker in a tissue, like skin, that proliferates quickly than in a tissue, like brain, that proliferates slowly if at all; and in an epithelial neoplasm proliferating with peculiar rapidity its duration will be transient, and this may perhaps explain the peculiar behaviour of vaccine virus in contagious epithelioma of the cock's comb.

A. A.

CHAPEYROU. **Considérations générales sur la climatologie, l'hygiène et la pathologie de la région de Fort-Lamy.**— *Ann. de Méd. et de Pharm. Colon.* Paris. 1922. May–June–July–Aug. Vol. 20. No. 2. pp. 188–193.

Fort-Lamy, situated in the French Colony of Chad to the south-east of the lake of that name, on the Shari river at 12° north, has a climate which is both tropical and Saharan. Variations of 20° C. in the 24 hours are common in the dry season. The author describes four seasons—a dry+cold, dry+hot, rainy, and hot+humid. The situation of the town is described as very insanitary. The chief causes of admission to hospital are trypanosomiasis (242 cases), syphilis (282) and traumatisms. Eight of the trypanosomiasis cases came from Fort-Lamy itself, the majority from villages on the Logone river, which enters the Shari here. *Glossina palpalis* is not found at any nearer point than Fort Archambault (300–350 miles away), but *G. tachinoides* is common and causes trypanosome infections in cattle and horses if they remain near the river between June and November. Other common affections of this region are guinea-worm and inflammatory diseases of the eyes.

A. G. B.

MATTLET (G.). **Service médical de l'Urundi. Rapport sur l'exercice février-décembre 1921.**— *Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 155–159.

This paper is dated from Kitega, Urundi. Here, at 1,600–2,000 metres altitude, are found malaria, a fever resembling typhoid, but giving no agglutination with T., A. or B., yaws and leprosy. A case of tuberculosis was seen. Yaws is widespread, the early stages in children; in the adults tertiary lesions, injuring the skin, deforming the long bones, ankylosing the joints, eroding the mucosae and destroying the bones of the face. A Taenia, said to be *T. saginata*, is common.

A. G. B.

RODHAIN (J.). **Contribution à la pathologie indigène du Bas-Congo. Notes cliniques.**— *Ann. Soc. Belge. de Méd. Trop.* Brussels. 1922. Dec. Vol. 2. No. 2–3. pp. 141–146. With 1 text fig.

Cases are described of arterial aneurism and glandular tuberculosis. An old woman had an aneurism of the aorta of five years' duration, which had eroded the manubrium sterni. A second case was that of

aneurism of the femoral artery, and a third of the left subclavian artery. These three were seen in eight months. The cause is obscure. The tubercular case was a boy of 12, who was admitted with axillary and crural glandular enlargements. Trypanosomal and filarial infection having been excluded, axillary glands were excised and two guinea-pigs inoculated. One died three months later with generalized tuberculosis and the histological examination of the glands confirmed the diagnosis. The author remarks on the rarity of this form of tuberculosis in the Lower Congo region.

A. G. B.

i. Kuno (Yas). **Ueber die Schweisssekretion des Menschen.** [Sweat Secretion in Man.]—*Trans. 4th Congress Far Eastern Assoc. Trop. Med.* 1921. Vol. 2. pp. 260–270. With 7 text figs.

ii. ——. **Ein Apparat für die Bestimmung der Schweissekretion.** [An Apparatus for Estimating the Secretion of Sweat.]—*Ibid.* pp. 271–273. With 1 text fig.

i. The phenomena of perspiration are considered under the following headings:—in different regions of the body (tabulated observations); as influenced by meteorological conditions; as affected by muscular fatigue, hunger, debauch, and disease. The subject is dealt with from a physiologist's standpoint.

ii. An ingenious apparatus for estimating the perspiration with a hair-hygrometer is here figured and fully described in itself and in its use. The author calls it a "perspirometer"; "hidrotometer," or even "hidrometer," would have been better, and also somewhat shorter—or "hidrotiometer."

A. A.

i. Snijders (E. P.) & Stoll (A.). **A Case of Rhinoscleroma in a Malay Woman in Sumatra.**—*Trans. 4th Congress Far Eastern Assoc. Trop. Med.* 1921. Vol. 2. pp. 296–297. With 1 plate.

ii. Schrieke (B.). **Some Remarks on Circumcision in the Dutch Indies.** [Abstract.]—*Ibid.* pp. 241–254.

iii. von Roemer (L. S. A. M.). **About the Exhibition in Connection with the Fourth Congress of the Far Eastern Association of Tropical Medicine held at Batavia from 6th–13th August 1921.**—*Ibid.* pp. 381–393. With 20 illustrations.

i. This case is described as being extremely rare in the Netherlands East Indies; indeed, the authors have been unsuccessful in their search for another case and even for any record of a case.

ii. An abstract of what appears to be a very discursive anthropological dissertation in which the practice of circumcision and other interesting practices and mutilations form the basis of much speculation. The indigenous operations of circumcision are not included in the abstract.

iii. Among the objects of interest exhibited may be mentioned, as illustrating the progress of local Dutch enterprise, material and products of the Government cinchona plantations and quinine factory, and of the Government rubber plantations and opium factory; specimens of medicinal plants and their products, including chenopodium, chaulmoogra oil, ipecacuanha, and coca.

A. A.

CHOPRA (R. N.) & GHOSH (B. N.). **The Field for Research in Indian Indigenous Drugs.**—*Indian Med. Gaz.* 1923. Mar. Vol. 58. No. 3. pp. 99–104.

COPPIN (H.). **Note sur un cas d'aérophagie chez un Annamite.** *Bull. Soc. Méd.-Chirurg. Indochine.* 1922. Oct. Vol. 1. No. 1. pp. 7–10.—[A Case of Air Swallowing without Special Features.]

FABRE (R.). **Quelques considérations sur les Alcaloïdes du Quinquina utilisés en thérapeutique.**—*Rev. Prat. Malad. des Pays Chauds.* Paris. 1923. Apr. pp. 189–193.

FIESSINGER (Noël). **Les Ictères par Hépatite.**—*Rev. Prat. Malad. des Pays Chauds.* Paris. 1923. Apr. pp. 143–154. [15 refs.]

MONROE (Willys M.). **Breve sumario de los rasgos más salientes en el trabajo contra la Anemia Tropical en Columbia durante el año de 1922.**—*Repert. de Med. y Cirug.* 1923. Feb. Vol. 14. (No. 161.) No. 5. pp. 183–188.

PÉTRAULT (Th.). **Quelques réflexions sur le traitement de la bronchopneumonie infantile à l'Hôpital indigène du Protectorat à Hanoi.**—*Bull. Soc. Méd.-Chirurg. Indochine.* 1922. Oct. Vol. 1. No. 1. pp. 27–48. With 4 charts.

SAMBON (Louis W.). **Pasteur and his Work Historically Considered.**—*Jl. Trop. Med. & Hyg.* 1923. May 15. Vol. 26. No. 10. pp. 151–177. With 2 plates and 22 text figs. [Refs. in text and footnotes.]

SCHOTTE. **L'exercice de la médecine dans une île du Pacifique.**—Reprinted from *Jl. des Sciences Médicales de Lille.* 1922. June 18–25. 12 pp.

REVIEWS AND NOTICES.

HONIG (P. J. J.). **Studie over de malaria te Nieuwendam en omgeving.** [Essay on Malaria at Nieuwendam and Environment.]—M.D. Thesis. Amsterdam: 1922. 79 pp. With 10 maps & figs.

If after 20 years of general practice a man can find time and energy to write a M.D. thesis, he certainly commands our admiration, and if he happens to be a shrewd observer and is conversant with the literature of the subject, we may expect an interesting and useful contribution to knowledge. In this case our expectations are fully justified.

The author's terrain of observation comprises five small villages, conveniently divided into two groups, one containing three villages built along the dike, and the other two villages in the "polder." Differences in the structure of the houses and the presence of neighbouring stables in the "polderland" favourably influence the incidence of malaria as compared with the low-built and dark houses on the dike.

Adopting Ross's thick-drop method, the author found that in 1920 14·26 per cent. of the population was infected, while in 1921 the figure was only 7·23 per cent. This marked drop was due to (*a*) the filling up of a complex of ditches which were very favourable breeding-places for *Anopheles maculipennis* (the only malaria mosquito to be found in that neighbourhood, (*b*) systematic mosquito hunt, (*c*) the high salt contents of the water after the prolonged drought.

Applying the law of average, the author confirmed the observation of others that in so-called "malaria-houses" the incidence of infection among the inhabitants is considerably higher than in the other houses. He attributes this to three possible causes:—

1. Preference of the anopheles for certain houses.
2. Their tendency to remain indoors during the development of the oocysts.
3. Their capability to infect several persons in one night.

This last possibility was clearly demonstrated in a case observed by SWELLENGREBEL: a person was bitten by a mosquito, but before it had sucked any blood the mosquito was caught. Dissection showed the salivary glands to contain sporozoites in great numbers. Ten days after the bite the person developed tertian malaria.

From his investigation of patients' blood and of mosquitoes during winter, the author comes to the conclusion that the great majority of malaria cases occurring in spring or early summer must have been infected in the previous autumn. In contrast to observations previously made by others, the author saw no increase of malaria after the serious floods of 1916, which devastated large parts of the province of North Holland.

This well-reasoned thesis clearly illustrates how the general practitioner can be a most effective first line of defence in our battle against disease.

T. Joekes.

STITT (E. R.). [Rear Admiral, Medical Corps, and Surgeon General, U.S. Navy.] **Practical Bacteriology, Blood Work and Animal Parasitology, including Bacteriological Keys, Zoological Tables and Explanatory Clinical Notes.**—xv + 766 pp. With 1 plate & 202 other illustrations containing 675 figures. Seventh Edition, Revised & Enlarged. 1923. London: H. K. Lewis & Co., Ltd. [Price 21*s.* net.]

That this work, which was first published 14 years ago, supplies a very distinct want is shown by its evident popularity, for it is now our privilege to welcome the seventh, enlarged and amended, edition. Though not essentially altered in character, it has been augmented by 132 pages and

now forms quite a bulky volume. Recent advances in biochemistry and serological tests, such as the Sachs-Georgi flocculation reaction and various modifications of the Wassermann test, are fully dealt with. The appendices contain a large amount of accurate information, where among other things the vitamins are described and the foodstuffs that contain them are tabulated at some length, so that what was originally a handbook on bacteriology and parasitology has gradually come to include a good deal of medicine. In entomology the description and classification of mosquitoes now occupies a considerable section. We note with some surprise that the generic term *Borrelia* is adopted for the spirochaetes of relapsing fever, a term evidently proposed by SWELLENGREBEL in 1907. This seventh edition is bound to enhance the reputation of this handy book; and if the compression of *multum in parvo* has been the chief aim of the author, one must admit that in this respect Stitt's Practical Bacteriology stands without a peer.

P. H Manson-Bahr.

Errata et Corrigenda.

Vol. 20, No. 6. p. 511. 4th para. from bottom, lines 3 and 4, *for* "3 with Gordon's Type II" *read* "3 with Gordon's Type III."

do. No. 7. p. 547. "Haemogregarines" in Man. The magnification of Fig. 10, 1 × 1,000, was omitted.

do. do. p. 576. Summary of CASTELLANI. line 3, *for* 5 cc. (injection of phosphorated oil) *read* 5 minims.

do. do. p. 584. Summary of COLES, line 3, *for* 91 *read* 9.